Paper TRADE JOURNAL

AUG. 31, 1951

ANOTHER RAYON PULP MILL FOR ALASKA
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ARE POWER PROBLEMS PUZZLING YOU?
Page 20

BOTHERED BY MAINTENANCE? . . . Page 23

"A SHOP TOOL"— IN THE PAPER MILLS AND IN THE PLANTS OF CONVERTERS

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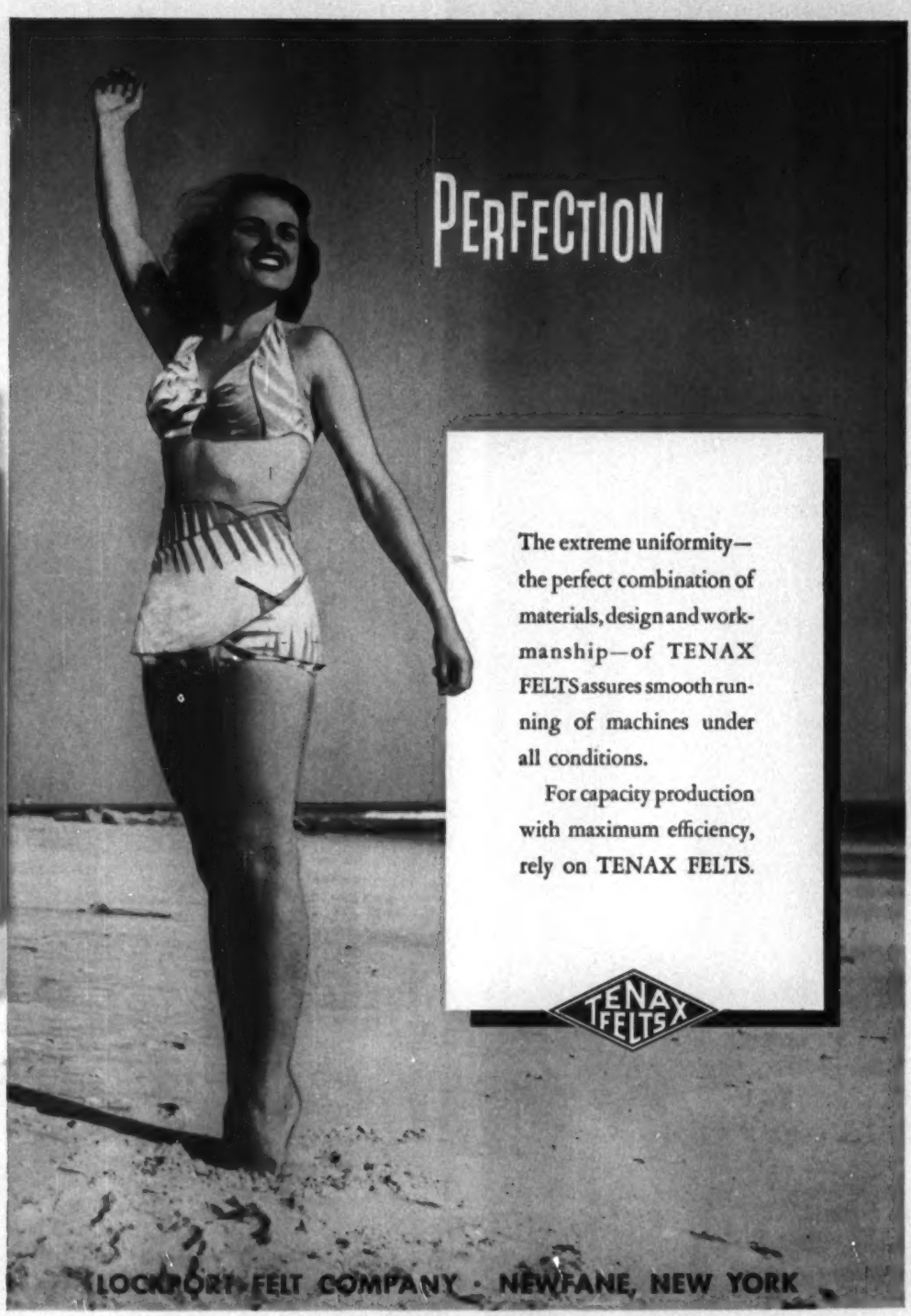
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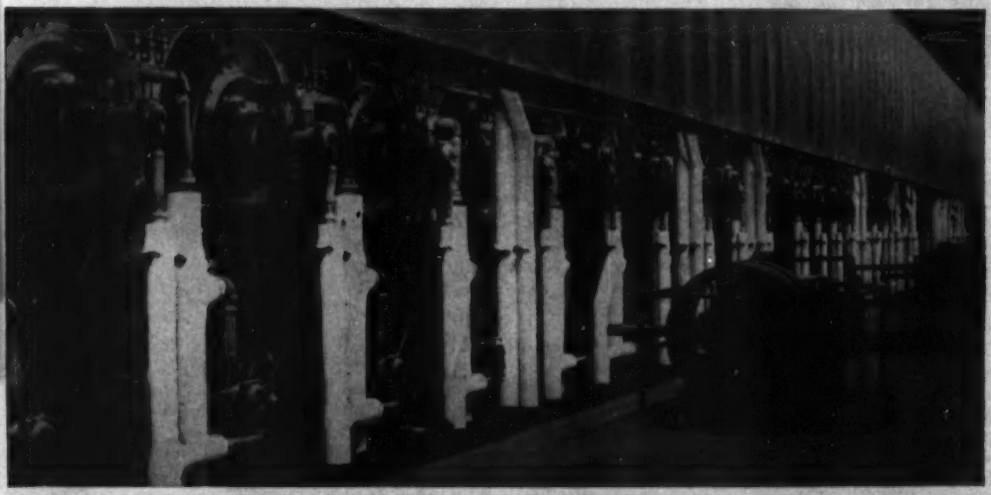

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Paper TRADE JOURNAL

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NEXT WEEK

ANNUAL MILL AND MILL EQUIPMENT NUMBER

REMEMBER THESE DATES

SEPT. 6-8: American Pulp & Paper Mill Superintendents Assn., New York, Canadian Division, meeting at Sarasac Inn, Saranac, N. Y.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northeastern Division, meeting at Poland Spring House, Poland Spring, Maine.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northwestern Division meeting at Northern Holiday Resort, Manistique, Mich.

SEPT. 16-19: American Institute of Chemical Engineers, Regional Meeting, Sheraton Hotel, Rochester, N. Y.

SEPT. 20: American Pulp & Paper Mill Superintendents Assn., Michigan Division, Fall Meeting at Hotel Harris, Kalamazoo, Mich.

SEPT. 26-28: Alkaline Pulping Conference of the Technical Assn. of the Pulp and Paper Industry at the John Marshall Hotel, Richmond, Va.

OCT. 10-12: American Pulp & Paper Mill Superintendents Assn., Southern and Southeastern Div's., George Washington Hotel, Jacksonville, Fla.

OCT. 15-18: 6th Engineering Conference, Technical Assn. of Pulp and Paper Industry, General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.

OCT. 29-31: National Foreign Trade Convention, Waldorf Astoria, New York City.

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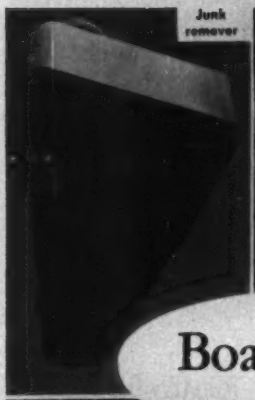
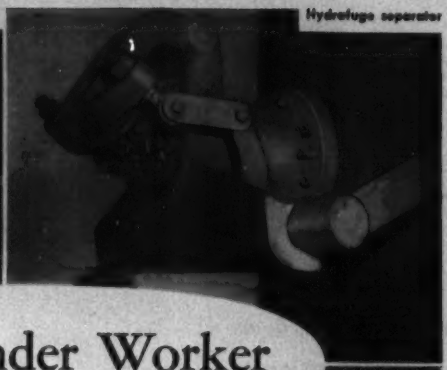
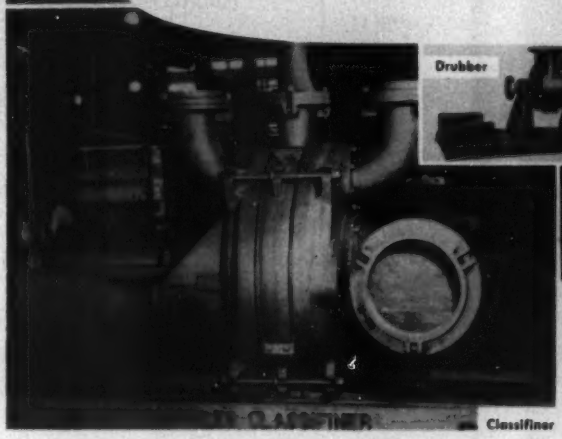




Board Mill Wonder Worker



It stretches the imagination almost to the breaking point to visualize a mechanical "gadget" or system able to take a bale of dirty mixed papers and in almost nothing flat separate the "gold" from the "dross"—paper fiber from all that miscellaneous waste.

That is exactly what a modern Shartle Stock Cleaning System does—making possible the economical use of dirty paper stock and the tremendous expansion of the board division of the Industry.

How This Board Mill Wonder Worker Works

1. **Junk remover to carry out of the Hydrapulper by bucket conveyor all heavy junk.**
2. **Ragger to reel out baling wires, rags, wet strength and other coarse floating trash.**
3. **Hydrafuge separator to remove all sand, grit, ground glass and other heavier-than-water fine materials.**
4. **Classifiner to screen clips, staples, pins, cork, cellophane, fiber bundles and fiber adhering to clips and staples—passing all free fiber on to thickeners and all rejected material to Disintegrator or Drubber for further salvaging attention.**
5. **Disintegrator, or Drubber, to break loose all fibers still congregated in bundles and all fiber still attached to clips and staples.**
6. **Selectrap to receive all material from Disintegrator or Drubber, separate and salvage any fiber still present and discharge the rejects.**

There you have it—a Shartle cleaning system at work—salvaging close to 99% of all fiber present in dirty paper stock—truly a Board Mill Wonder Worker.

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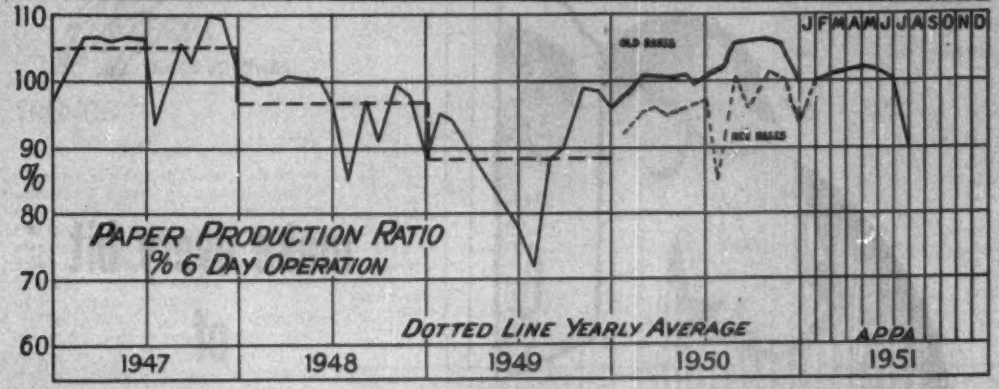
OUR BUSINESS



Brief of Important Figures

Source	Production	WEEK ENDING Aug. 18, '51	July 21,'51	Aug. 19, '50
APPA	Paper Production Percent Capacity[a]	98.3	99.2	100.0
	Unbl. Kraft Paper Production Percent	94.2	98.3	99.0
NPA	Paperboard Operating Ratio Percent Inch Hours	94	94	101
		June 1951	**May 1951x**	**June 1950**
APPA	Paper Production[e] (Except Newsprint and Building Papers) ....Tons	859,000	909,757	788,500
	New Orders ....Tons	861,000	887,883	812,800
	Unfilled Orders ....Tons	995,000	997,925	565,565
	Shipments ....Tons	861,000	902,729	786,300
		July 1951	**June 1951**	**July 1950**
NPA	Paperboard Production ....Tons	815,547	977,214	745,255
	New Orders ....Tons	814,729	873,807	890,890
	Unfilled Orders ....Tons	537,591	547,963	524,391
	Our Customers Activities Index[1]	**Latest Mo.[c]**	**Previous Mo.[c]**	**Year Ago**
FRS	Manufactures Total Index	233	232	203
	Durable Mfg. Index	278	278	232
	Nondurable Mfg. Index	196	195	180
	Chemical Products Index	297	297	255
	Mfg. Food Products Index	159	153	157
	Printing and Publishing Index	181	188	169
ODC	Magazine Advg.-Printer's Ink Index	355	338	324
	Retail Sales Combined Adjusted Index	347.6	343.3	315.0
	Drug Index	229.8	231.4	215.9
	General Merchandise Group Index	334.0	326.8	306.6
	Grocery and Combination Index	442.5	437.7	379.1
	Prices Index			
BLS	Consumers Price Index[3]	185.4	184.6	169.3
	Wholesale all Commodities[2]	182.8	183.5	155.9
	Wholesale Foods[2]	187.2	185.7	159.9
	Commodities other than Farm Products and Foods[2]	171.5	172.4	147.6
	Wholesale Pulp and Paper[2]	196.2	196.2	155.4
	Purchasing Power of Dollar, Consumers Prices[3]	53.9	54.2	59.1
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	433.3	348.0
	Unemployment Compensation Initial Claims (M)	908	983	1,367
	Miscellaneous Carloadings–Thousands of Cars	1,582	1,580	1,423
	Electric Output (Million KW hr.)	35,136	34,431	31,486
PTJ	Average 32 P & P Common Stocks as of Aug. 27	$38.91	$39.28	$32.04

[1] 1935-39=100 Unadjusted Index
[2] 1926=100
[3] New 6-7 day basis
[c] For Five Weeks.
[e] For details see APPA Monthly Statistical Summary—June 1951 Estimated Figures
[x] Latest Month Available on Revised figures.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 29, 1951.

Opinions vary so widely about the immediate future of general business and paper and board requirements therefor that the *Journal's* editors increasingly find themselves being interviewed for the principal delineations of today's market—a complete reversal of the normal practice.

Notable is a growing skepticism about the Fall business pickup which should be in the making now. The marked tendency today—a week before the post-Labor Day revival is due to gather momentum—is to hew to the line that the usual seasonal business will speedily develop and to plan production accordingly.

Business writers this week see a strong possibility that Administration spending—which was to take up any slack in civilian demand—will continue to lag behind official schedules. Some are beginning to doubt that upturn which is held to be "just around the corner." They reason that manufacturers' inventories in much of general business are very high; distributor stocks only a degree healthier than in June. Consumer demand would have to mount to the proportion of a buying spree to take up the overproduction, many economists believe.

In other words, there is more caution in today's industry planning, less wishful thinking about a Fall pickup and the size of Defense program buying. Proposed by the Senate is another billion dollar cut in foreign aid to friendly countries that could buy our overproduction. Expressed is grave concern that overproduction might seriously react on our economy by next year.

Reaction on Raw Materials

In most raw materials planning, the tendency seems to be to prepare for full production at current levels. The possible exception lies in that portion of the paperboard industry which finds its inventories of boards and boxes for the retail trade topheavy.

Consumer demand for the soft goods which go into these boxes must take a big lift, 'tis said, since the shelves are loaded with goods already boxed; boxes are stacked up, boards are piled, and waste papers, moving so slowly they glut the market.

No important price change is expected in waste papers, though a sharp increase in buying is looked for after Labor Day—at current prices. Unless the mills do buy heavily, however, prices doubtless will sag further. Price-wise, the line is heavily baited with hope.

Table I

WOODPULP: U. S. PRODUCTION, CONSUMPTION, INVENTORIES, JUNE, 1951

(Tons of 2,000 pounds)

Grade	U. S. Production: Tons	U. S. Production: % in Base	Consumption in paper & bd. manuf.	End of Month Inventories: At pulp mills, for later sale	End of Month Inventories: At paper & board mills: June 1951	End of Month Inventories: At paper & board mills: May 1951
Total	1,429,104	91.8	1,533,760	30,904	439,939	421,659
Sulfite, Total	259,226	90.0	276,972	14,964	180,372	173,096
Blchd. Total	194,190		176,973	13,644	77,661	80,212
Dissolving	44,063		4,833	n.a.	8,771	9,136
Softwood	139,671		159,421	n.a.	63,123	64,776
Hardwood	10,456		12,719	n.a.	5,763	6,310
Unbichd.	65,036		99,999	1,220	102,911	92,884
Sulfate, Total	749,637	96.6	804,043	4,642	183,642	173,913
Bichd. Total	165,041		200,582	n.a.	93,372	92,265
Semi-bichd.	26,765		30,111	n.a.	7,340	7,299
Unbkchd.	557,831		573,350	788	83,030	74,349
Soda	38,753	73.0	42,187	494	12,092	12,431
Groundwood	211,643	85.3	230,182	n.a.	55,503	54,160
All Others	169,845	89.4	172,376	n.a.	n.a.	n.a.

Based on Bureau of Census figures. n.a.—not available.

Wood Pulp Trading and M-72

September 1 for market pulp consumers marks the hour when inventories come under Order M-72 limitations. Under its direction, no consumer of market chemical wood pulp may "receive or accept delivery of any quantity of such pulp if his inventory of all grades of such pulp combined (including on hand and stored for his account) is . . . or would become more than a 45-day supply" of domestically produced pulps, or 120 days of overseas grades.

This limitation is one of the three clauses of the order which has altered the pattern of wood pulp trading since July 1, when the order became effective. Another clause is that which limits consumption to 95 percent of 1950 consumption. One other which markedly effects buying is that which makes available to consuming mills 3 percent of integrated mill pulp reserves.

Which is to say that through the summer the market has been adjusting to requirements of M-72 and to its companion pricing order, CPR 49, which by setting ceiling buying prices for overseas pulps cut back by as much as 50 percent the flow of Swedish pulps to this market and by Scandinavian writers, is said to have depressed the world market price.

On the whole, the domestic mills feel M-72 is a good order. Its principal effect appears to have been to show up the inventory position of most mills as well over what had been "guestimated."

Mills in this category already have felt the impact of the September 1 inventory limitation, as well as the 95 percent consumption restriction. They have had to turn down offers of reserve pulps.

Others which had short inventory positions are trying to acquire pulps at ceiling prices to the 45-day limits. Some are trying to dispose of quantities bought at premium prices. Such resales are covered by Sec. 10 of CPR 49 which regulates the price at actual cost of acquisition, plus actual costs incurred in handling and transporting from reseller's mill or warehouse to the consuming purchaser.

It is believed that full gearing of the order will be felt by September 1 when the inventory restrictions become a law, instead of a date towards which one works.

Unbleached Kraft Soft

Softening of supply which has been reported for some weeks in unbleached krafts exists almost entirely in southern grades that could not be used to replace northern krafts. Where this substitution was possible, some few cancellations were reported, though most mills have been careful not to jeopardize contract standing by current offerings. Generally it is believed that the southern mill grades found no takers because they could not be used, and since September 15 marks the date when integrated mills may use any reserve balance which have not been sold either by voluntary offering or by NPA directive, it is assumed that the unbleached kraft market will firm until October 1, when the fourth quarter rolls in.

Pulp Production Gains

Overall increases in U. S. pulp production capacity during the first six months of 1951 stood at 148,290 tons, according to Bureau of the Census reports. Of this total, 20,656 tons were in sulfite grades, 84,754 in krafts, and the balance distributed among soda, groundwoods, screenings, etc. Official estimate of total U. S. capacity gain for 1951 is 1,317,000 tons. For details of June production, see *Table I.*

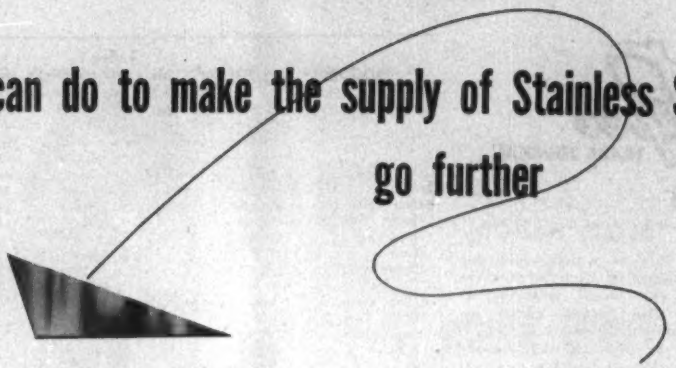
—E. P. N.

Paperboard Production (Tons)*

	Aug. 18 1951	Aug. 11 1951	Aug. 19 1950
Production	223,617	223,293	229,349
New Orders	187,002	166,587	265,558
Unfilled Orders	568,311	607,643	679,065

* Source: NPA.

What you can do to make the supply of Stainless Steel go further



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Alternate compositions are especially important. By government order, certain alloys including nickel, molybdenum, columbium and titanium, have been restricted as to end use. But in many cases, you may be able to obtain an alternate grade that will fit your fabricating and service requirements.

Familiarize yourself with government orders regarding the use of Stainless Steel and examine your requirements in light of these directives. If you need assistance in evaluating various grades, gages etc., our representative will be glad to help.

LOOK AHEAD

When ordering, anticipate your needs as far in advance as possible and advise the rate at which steel will be required. And, above all, turn in every pound of scrap to the mills as quickly as possible. It is needed urgently to keep new steel flowing to you.

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UNITED STATES STEEL

Paper TRADE JOURNAL

News of the Week

NEW BOX BOARD MILL

ROANOKE RAPIDS, N. C.—Announcement is made that a certificate of necessity for a $3,315,000 box board mill to operate under the name of Roanoke Rapids Paper Co., Inc., has been issued by the DPA.

Incorporators are J. W. Crew, Jr., Mary Jane Crew and Mrs. Frances Raines.

Mr. Crew said the new plant would have a 100 ton daily capacity, using wastepaper as raw materials. Preliminary engineering work on the plant has been done by the H. K. Ferguson Co.

HOWARD SMITH EXPANSION

Premier Duplessis announced projected expenditure of $21 million by Howard Smith Paper Mills Ltd. on expansion of its wood products plants at Windsor Mills, Que., and Crabtree Mills, Que.

The premier said the company will spend $7 million on a five-year-plan of enlarging its pulp mills at Windsor Mills, in the Eastern townships, and another $14 million in two years to extend its paper products plant at Crabtree Mills, in Joliette county.

ALASKA PINE MODERNIZES

VANCOUVER, B. C.—W. C. Koerner, vice-president and managing director of Alaska Pine and Cellulose Ltd., said a $6 million modernization program for the Port Alice (B.C.) dissolving sulphite mill of the company is planned.

The program for replacement of major units in the process that produces pulps to exacting chemical standards, will take two years.

The mill, on the west coast of the north end of Vancouver Island, is one of two formerly operated by B. C. Pulp & Paper Co. Ltd., and now operated by Alaska Pine and Cellulose Ltd. The latter company represents 50-50 interests of the Koerners and associated companies, and Abitibi Power & Paper Co. Ltd.

The mill produces dissolving pulps used in manufacture of rayon and staple fiber, and high grade bleached pulp for making fine papers.

Mr. Koerner said the modernization program for Port Alice calls for a whole-log barker and chipper plant, a new modern bleach plant, a bleached pulp screen room, a high-pressure 225,000 pounds an hour steam boiler, and major changes in the mill water supply.

He said Port Alice will be one of the most efficient producers of high-quality dissolving cellulose on the Pacific Coast when the modernization is complete in two years. The work already has been started.

The aim, Koerner said, is the "upgrading of quality to the highest degree, combined with most efficient use of raw materials, particularly wood, thus achieving the highest dollar return from the forests."

Planning and engineering, carried out entirely in the company's Vancouver offices, is directed by W. A. Bain, chief engineer; L. C. Kelly, general superintendent, and Les Clemmson, general manager of the cellulose division, formerly of Abitibi Power & Paper Co. Ltd., Toronto, Ont.

COOSA HIKES NEWSPRINT RATE

COOSA PINES, Ala.—Coosa River Newsprint Co. on August 23 announced a $5 per ton hike in the price of newsprint. This is the second such increase this month.

Letters announcing the increase said that rising costs were responsible for the price boost.

LABOR PACT RAISES COSTS

TORONTO, Ont. — According to a spokesman for nineteen Ontario pulp and paper companies and timber operators, a new labor agreement would increase the production cost of newsprint by more than $2.50 a ton, but added the companies would try to prevent a rise in the consumer price.

Earl Rowe, president of the Great Lakes Paper Co., which sells its entire production in the United States, said the average 14½ per cent wage increase granted to 20,000 bush workers was only part of increased production costs confronting the companies. Higher "stumpage" dues announced August 23 by the Ontario Government would mean a further $1-a-ton increase.

"Fortunately, we are operating at 100 per cent capacity, which makes for economy. We also will try to make other economies to prevent, if at all possible, an increase in the cost of the end product."

START BUILDING IN OCTOBER

EDMONTON, Alberta — Northwestern Pulp and Power, Limited, said it would start building a $5 million ground pulp plant in October at Yates, Alta., 150 miles west of here.

Lieutenant-Governor of British Columbia, Clarence Wallace, talks to pipe major Don Mackenzie of Powell River Co.'s famed pipe band which was on hand at the dockside to meet him on his arrival for a recent visit to the mill. Powell River Co. President, Harold S. Foley is on the Lieut. Governor's left.

ANOTHER ALASKA PULP MILL

ANCHORAGE, Alaska — An Alaska-financed corporation is being formed to build a 30-million dollar pulp mill near Juneau, it was announced this week by B. B. Mullen of Juneau, corporation organizer.

Mr. Mullen said the plant will produce pulp for use in rayon and munitions-making. First units of the mill, to be completed in 1955, will produce between 200 and 250 tons of pulp daily.

The mill will employ about 300 men for 24-hour operations and about 150 more for lumbering and other outside operations.

The plant will be operated in much the same manner as the recently announced 40-million-dollar Ketchikan Pulp and Paper Co. plant near Ketchikan. However, Alaska capital will be used to build the Juneau plant instead of outside financing.

In a recent meeting with the Juneau chamber of commerce, Regional Forester B. Frank Heintzeman of the U. S. Forest Service suggested Juneau as site for large newsprint plant, stating that there was ample power and timber for a paper-producing mill.

The projected new pulp mill apparently will not meet this need since the Anchorage announcement of the promoting corporation stresses that the pulp will be used for the manufacture of rayon and in munitions making.

POWELL RIVER ENLARGES

The Powell River Co., Ltd. and the B. C. Manufacturing Co., Ltd., together with their associated companies, have negotiations underway whereby the B. C. Manufacturing Co., Westminster Shook Mills, Maple Ridge Lumber Co. and the Salmon River Logging Co. will become a part of the Powell River Co.

The move is made by both interests to secure a closer integration of their joint forest holdings and to bring about complete utilization of their wood products and further harvesting of sawmill and logging waste for pulp operations.

One immediate effect of successful negotiation would ensure a maximum production of newsprint at Powell River for the balance of this year. It is possible that these companies would initiate further utilization by the installation of chipping facilities, and the immediate establishment of forest salvage operations now planned by Salmon River Logging Company.

The joining of these pioneer enterprises would ensure maximum employment for the employees and would be in the best interests of shareholders, public and the Government by the conversion of all forest products in their proper economic units and, at the same time, obtain maximum recovery from forest and sawmill waste.

No public financing is contemplated as a result of these negotiations.

Crusade For Freedom

Inspecting one of the rolls of paper the Hamilton division of the Champion Paper and Fibre Co. made for the printing of Crusade for Freedom leaflets which have been ballooned behind the Iron Curtain into Czechoslovakia. Picture are, left to right, John Ramsey, superintendent of papermaking; Coleman Bishop, inspector; Howard Lipscomb, boss machine tender, and Earl Jones, production manager . . . The grade of waterproof paper was Special Ariel Bond and the manufacture was on Hamilton Champion's No. 3 paper machine. The order was started at 8 a. m. on July 24 and finished on July 25 at 3 p. m. Total pounds involved were 56,000 . . . Because of the top secret nature of the operation only a few at Champion knew what the paper was for, and the news did not become public until announcement a few days ago in New York.

WEYERHAEUSER AWARDS

EVERETT, Wash.—The Weyerhaeuser Timber Co. will build a $20 million pulp mill here to produce 250 tons of bleached kraft a day.

L. H. Hoffman, Portland, Ore. has been awarded the general contract for all building, setting of equipment, piping work and electrical work.

Work has been started. A sub-contract for 6000 composite pile has been awarded to Raymond Concrete Pile Co., Equitable Building, Portland, Ore.

A company spokesman said the mill would employ 250 men and add $1,500,000 to the firm's payroll. The plant will be constructed on the west side of the Snohomish River bridge on Highway 99.

MAKE NEWSPRINT AND BAGS

CHEBOYGAN, Mich.—Newsprint and kraft paper for bags are now being manufactured at the Lesavoy Paper Mill here.

For a long time after the mill reopened, production was confined to carton paper. But due to the severe damage by fire of the paper mill at Newark, Ohio, recently, the Cheboygan mill has completely suspended manufacture of carton paper and is now devoting its machines to newsprint and kraft paper production.

The newsprint is shipped to New York.

ISSUE UNION FILM

SPRINGFIELD, Mass.—Unionized papermakers in this area are awaiting the production of a film depicting the birth and operation of a typical papermakers' union, which is now in production at Woronoco. It is expected to have its premiere there the latter part of September and then will be shown all over the United States and Canada.

Sponsoring the film is the International Brotherhood of Papermakers, AFL. Members of the cast are made up of men and women workers and their families who hold cards in Tekoa Local 197, IBPM, and who work at the Strathmore Paper Mill in Woronoco. However, in the film, the mill will be known as the "Avon Paper Co."

None of the Strathmore Paper Co. officials take part in the show. Union members "play" mill executives throughout. But the IBPM stated they are greatly indebted to the Strathmore Co. for its cooperation in permitting use of the mill facilities without restrictions.

Plans for this documentary film originated with Russell Allen of Albany, N.Y., educational director of the IBPM. He toured the country looking over paper making establishments and finally settled on the Strathmore plant. Mr. Russell said that company officials, with whom the union for many years have enjoyed excellent labor relations, agreed to the use of their mill. However, because the story starts with an "unorganized shop" it was agreed to use a fictitious name for the company in the film.

FILM CHAMPION OPERATIONS

Champion Paper and Fibre Co. has signed contracts with Wilding Picture Productions, Inc., Chicago, for producing new all-color movies of Champion's integrated papermaking program, with "shooting" plans encompassing all Champion areas.

Already, Wilding personnel are on the Champion scene studying the company's operations and how these operations will fit into their plans in writing a story of unusual interest to both Champion people and Champion communities as a whole.

The new movies are the direct responsibility of the General Public Relations Department, working with all divisional managers and in cooperation with the respective department heads. The movies are expected to be completed during the early part of 1952.

SPAULDING BUYS TIMBER

Spaulding Pulp and Paper Co. of Newburg, Ore. recently purchased 1,040 acres of timberland in the North Santiam Canyon area. The company paid $166,500 for the land, Herman Lanke, recorder, stated.

TOO MUCH MILL WASTE

CHICAGO, Ill.—Dr. T. Enkvist, professor of organic chemistry at the University of Helsingfors, Finland, and formerly head of the Swedish forest products laboratory, recently visited Dr. Johan Bjorksten, head of Bjorksten Research Laboratories in Chicago.

In wood there is cellulose, hemicellulose, and lignin, he pointed out. And for every 50 tons of paper made from spruce wood, about 28 tons of lignin and 22 tons of hemicellulose go down the drain. If less would be consigned to the drain and more turned to profitable use, the paper industry would be understandably happy.

The American paper industry has been endeavoring to do just that for a long time. Thus Dr. T. Enkvist hadn't said anything new in that regard. He did, however, tell how waste is utilized to some extent in Sweden and Finland.

In Finland and Sweden, where coal is very scarce, lignin is used to some extent as an industrial fuel, primarily in the paper plants where it is produced. A solution of 50% water and 50% lignin can be sprayed into a furnace and burned successfully notwithstanding the high water content.

Similar use of lignin has been the subject of experiment in mills throughout the United States, not particularly because of any shortage of fuel but because disposal of the waste material makes a water pollution problem. Experiments to date are considered not conclusive.

A more promising possibility in the United States takes in the derivation from lignin of chemicals used in the tanning process, in dyes, and in pharmaceuticals, Dr. Enkvist said. This, he believes, can be done. It remains to make such chemicals available as cheaply from lignin as from other sources.

Dr. Enkvist mentioned the fact that in Finland when the war removed normal supply sources for a great many items, edible sugar was produced from sawdust and lubricating oil from other wood. Neither product, he observed, could compete with the genuine article under normal circumstances of supply.

DALTON MILLS RAISE WAGES

PITTSFIELD, Mass. — A two-cent wage increase for about 1000 hourly paid workers in the two Dalton paper mills was announced by officials of Crane & Co., and Byron Weston Co. Two cents is all the increase authorized under the present Wage Stabilization Board formula. Both Dalton firms also announced they have petitioned the board to allow a third week's paid vacation for employes with 15 years' service or more.

The increase follows a similar boost in pay granted to union paper mill workers in the Holyoke area. Both Dalton mills are non-union, but their pay rates generally parallel union scales in the industry. The two cents brings wage increases since the end of World War II to 50 cents. Five-cent hikes were put into effect in June and October of 1950. Prior to that, there was a 10-cent hourly raise granted in June, 1948.

Officials of the Crane mills estimated that about 35 percent of the firm's 725 hourly rated employes will be eligible for the third paid vacation week. At Byron Weston Co., the percentage is higher. Close to 100 of the 250 workers have 15 years' or more service with the company.

The increase is retroactive to August 6.

AMERICAN BOX NEW PLANT

The American Box Board Co., Grand Rapids, Mich. has completed a new container plant in Grand Rapids for the manufacture of corrugated and solid fibre shipping containers.

The new plant is located on Chicago Drive in Wyoming Township, where the company has obtained thirty acres of land. Construction of the building, which covers five acres of ground, commenced in July of 1950 and was completed in June of 1951 at a cost of over $1 million.

The building has 225,000 square feet of production floor space and an additional 8,000 square feet of office space. It is of modern one-story construction with bays 40' by 60'.

The sidewalls are concrete block, brick veneered to sill height with bonderized steel sash ventilating windows. The upper portion of the sidewalls are corrugated transite exterior, backed up with fibre glass insulation with corrugated aluminum interior. Ceiling height is twenty feet.

The roof is a flat construction of eighteen gauge Truscon steel decking covered with 1" fibre glass insulation and topped with tar and gravel roofing.

The plant is served by the C & O Railroad and has three sidings, two of which enter the building, the first has a six-car capacity within the building for outbound shipments. The second is a receiving siding having a five-car capacity within the building. The third switch track serves the boiler room and is entirely outside the plant.

There are two truck docks within the building, the first of which is the shipping dock, capable of housing ten sixty-foot overall tractor-trailer units and the second is a receiving dock, capable of housing two units of the same size, as given above. Both docks are equipped with self-leveling loading plates and the entrances have electrically-operated overhead doors.

One of the main features of the plant is the rollstock pit, having a capacity of 6000 tons. It consists of an area 120' by 240', recessed twelve feet below the operating floor and having a total working height of 40 feet. The pit is spanned in full by 120' trusses which support a five-point suspension crane of the same width. The crane operates at a 500 ft. per minute travel speed with the cab or bridge at 150 feet per minute and the grab has a vertical travel at 32 feet per minute. The grab is an electrically-operated man saver grab with a capacity of 6000 pounds. The total crane capacity is five tons.

For heating and processing steam, there are two Wicks 13,500 lbs. per hour boilers capable of operating at 300 lbs. pressure. In addition, the boiler room is equipped with a coal silo and overhead ash silo located directly above the switch tracks to facilitate car loading. A coal-receiving hopper is installed under the tracks together with conveyor and coal elevator to silo.

Primary power is purchased with a 1000 KVA sub-station in the plant housing transformers and direct current generators.

The plant lighting consists of 1800—100 watt fluorescent continuous fixtures giving a total of 30-foot candles at working level.

The plant is fully sprinkled with full ADT control.

Locker rooms, rest rooms and First Aid are glazed ceramic tile and have Crane fixtures installed throughout.

A cafeteria and canteen are a part of the employee facilities equipped with Duparquet modern stainless steel equipment. The cafeteria has a seating capacity of 108.

In addition, there is a complete testing laboratory, baler room, supply storage room and maintenance shop.

The plant is equipped with a new Langston 85" corrugator having shaftless roll stands, A and B flute heavy duty singlefacers, triplex slitter scorer and double cut off; three printer slotters; six taping units; four slitters; two hand slotters; one 72" Paster starch-making equipment; two Swift Blankers; one Knowlton Blanker; one long-way Hooper two-color press; one paraffine machine; one bar creaser; eight stitchers; two Thompson die presses; one Sheridan die press; two partition slotters; one band saw; five Pul-Pacs for material handling and two fork lift trucks.

The company has transferred its Folding Box Division from a building formerly occupied to the space vacated by the Corrugated and Solid Fibre Divisions. This move is designed to permit further expansion in folding box production through added floor space as well as reduced operating cost through reduced material handling costs and increased efficiency.

SMITH PAPER MOVES

W. H. Smith Paper Corp., 121 Hudson Ave., Albany, N. Y., will move to 46 Dongan Ave., September 1.

A company official said the move was necessitated by a shortage of space in the present location. The company has offices in Hudson Ave. and a warehouse at 212 Sheridan Ave. Both offices and storage space will be housed in the Dongan Ave. building.

AWARD 28 MILLS

From the 5,000 corporation annual reports for 1950 rated in the Eleventh Annual Survey, conducted by Weston Smith of Financial World, twenty-eight pulp and paper companies have qualified for "Highest Merit" citations:

Abitibi Power & Paper, Bathurst Power & Paper, British Col. Forest Products, Brown Co., Champion Paper Co., Consolidated Water Power & Paper Co., Crown Zellerbach Corp., Eastern Corp., Eddy Paper Co., Ltd., Fraser Cos., Ltd., Great Northern Paper Co., Hammermill Paper Co., Hoberg Paper Mills, International Paper Co., Kimberly-Clark Corp., Marathon Corp., Mead Corp., Nekoosa-Edwards Paper Co., Oxford River Co., Powell River Co., Ltd., Puget Sound Pulp & Timber Co., Rhinelander Paper Co., Riegel Paper Corp., St. Lawrence Corp., Ltd., St. Regis Paper Co., Howard Smith Paper Co., S. D. Warren Co., and West Virginia Pulp & Paper Co.

The stockholder reports of these companies have thus become candidates for the final judging, and one will be selected for a "Best of Industry" award and presented with a bronze "Oscar of Industry" at the Financial World Annual Report Awards Banquet on Monday, October 29, 1951, in the Grand Ballroom of the Hotel Statler in New York. A year ago the 1949 annual report of Champion Paper & Fibre Co. won the trophy for the best report in this industrial classification.

LIGHTING PAPER WANTED

Invitation to bid has been issued by the New York Quartermaster Procurement Agency, 111 East 16th Street, New York 3, N. Y., on QM-30-280-52-119, Tag, Shipping, Paper, (Various Colors and Sizes), 11,950,000 each; and Tag, Stock, Paper, (Various Colors), 8,300,000 each. Bids will be opened September 24, 1951 at 1:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Navy.

QM-30-280-52-136, covering Paper, Carbon, Standard Weight and Lightweight, (Various Sizes), 26,980 Boxes. Bids will be opened September 12, 1951 at 10:00 A.M. (EDST) at the New York Office. This procurement is for the U. S. Navy.

QM-30-280-52-126, covering Fiberboard, Water Resistant and Nonwater Resistant (Bursting Strength and Corrugations per Foot Various), 157,000 sheets. Bids will be opened September 17, at 4:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Navy.

QM-30-280-52-128, covering Bags, Paper, Satchel-Bottom, Capacity ¼ Barrel Sack, 24" x 36"-500/60 lb. Basis Weight, 150,000 each. Bids will be opened September 7, 1951 at 1:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Marine Corps.

QM-30-280-52-120, covering Pad, Memo, Sub. 16, 100 Sheets per Pad, White, RULED, 8 x 10½", 2,225,040 each. Bids will be opened September 11, 1951 at 2:00 P.M. (EDST) at the New York Office. This procurement is for the U. S. Army.

QM-30-280-52-127, covering Pad, Memorandum, Groundwood, Type II, White, 3½" x 8", 35,004 Pads. Bids will be opened September 11, 1951 at 10:00 A.M. (EDST) at the New York Office. This procurement is for the U. S. Navy.

MANDO TO RAISE WAGES

INTERNATIONAL FALLS, Minn—Nine AFL unions and the Minnesota and Ontario Paper Co. on August 21 agreed on an immediate two-cent-per hour wage increase for four AFL locals at the strike-bound Mando plant here.

The contract amendment also included plans for an application to the wage stabilization board for two-cent hourly boosts for certain classifications within two additional craft unions and a request for an additional six-cent hike for all nine AFL groups.

Meanwhile the plant was still closed by a strike of 1,200 members of local 33 International Woodworkers of America, CIO, who walked out last week because of dissatisfaction with a wage agreement reached May 8.

DIAMOND MATCH RAISES PAY

OGDENSBURG, N. Y. — Negotiations between Local 502, United Paperworkers of America, C.I.O., and the Diamond Match Co. for a new contract have been completed.

Climaxing a series of meetings between officials of the company at the Ogdensburg pulp and paper division and union representatives, a ten-cent increase in hourly pay was said to have averted a possible strike. The former basic rate was $1.03½ an hour.

PEOPLE

JAMES L. VAUGHN has been appointed merchandise director of the variety goods division of Acme Paper Co., Memphis, Tenn.

WILLIAM A. KITTEL has accepted a position as regional director of the International Brotherhood of Paper Makers, AFL, for the mid-west states. The territory serviced by the regional office, which is situated in Kalamazoo, Mich., consists of the states of Illinois, Indiana, Iowa, Kansas, Ohio, Lower Michigan and Missouri.

He has been field representative in New England for the international union for three years. Previous to that time he was employed by Strathmore Paper Co. for 20 years. A year ago the international union awarded him a scholarship at Harvard University and in the fall he took a three-month trade union course there. For the past six years he has served as treasurer of Westfield Central Labor Union.

THEODORE H. DAVIS, district forester for the Champion Paper & Fibre Co., Canton, N. C., has been added to the staff of American Forest Products Industries as a forester. JAMES C. McCLELLAN, for five years a forester for AFPI, has been promoted to the position of chief forester.

RICHARD L. LAUDERDALE, sales engineer of Builders-Providence, Inc., has joined the engineering sales staff of Builders-Pacific, Inc., Berkeley, Calif. WALTER H. BROWN has been transferred to the Projects Dept. of Builders-Providence, Inc., and will specialize in equipment applications for sewage and industrial waste treatment. Previously he was a sales engineer in Builders' Standard and Engineered Products Dept.

ARTHUR B. HALL has been appointed director of Industrial and Public Relations of The Ohio Boxboard Co., Rittman, Ohio. Mr. Hall was vice-president of Personnel and Industrial Engineering for Stahl-Meyer, Inc., New York City, prior to his association with The Ohio Boxboard Co.

JOHN P. SCHWEDE, director of exports for the Union Bag & Paper Corp., has left on an 18 months' trip to Central and South America. Mr. Schwede will make his headquarters in Costa Rica. He plans to visit all the major Latin American markets. His itinerary will include Mexico, Central America, Colombia, Venezuela, Brazil, Cuba, Santo Domingo, Haiti and Puerto Rico. The purpose of this trip is to make an extensive survey of the Latin American markets towards developing a long range export program for Union's products.

ROBERT N. WALLIS, assistant treasurer, Dennison Manufacturing Co., Framingham, Mass., will preside at a special industry conference of controllers of companies in the paper products field, to be held in conjunction with the twentieth annual meeting of the Controllers Institute. The gathering will take place September 30 to October 3, in the Waldorf-Astoria, New York. Mr. Wallis will also serve as moderator of a symposium on "Can Conventional Accounting Cope with Inflation?" at a general session on October 1.

G. FORREST GILLETT, vice-president of the Chicago Paper Co., will deliver a short talk on "Effective Paper Mill Advertising from the Paper Merchant's Viewpoint" at a breakfast meeting of the Paper Makers' Advertising Assn. at the Blackstone Hotel, Chicago, on October 5.

The P.M.A.A. meeting, held in conjunction with the National Paper Trade Assn. convention at the Stevens Hotel, constitutes the fall gathering of sales and advertising executives of the more than 25 mills comprising the association membership. All members of the P.M.A.A. are manufacturers of mill brand fine and printing papers, and maintain association offices at 581 Boylston Street, Boston.

CLARK CARNES, formerly in the industrial relations department of Kimberly-Clark Corp., has been appointed personnel manager of International Cellucotton Products Co., Chicago.

ROWLAND L. HALL has been named purchasing manager of the American Box Board Co. Mr. Hall joined the company in 1932. He succeeds Kenneth Hodge who has taken charge of the newly-formed analytical section of the sales division as market analyst.

R. H. R. YOUNG has been named vice-president in charge of manufacturing by Pacific Mills Ltd. He has been manager of manufacturing operations for the company since 1946 and will continue this activity in addition to his new appointment as vice-president.

FORESTRY

MICHIGAN OFFERS TREES

LANSING, Mich. — The conservation department reported recently nearly 20 million trees will be available at cost this fall to land owners for private reforestation projects.

The bulk of the stock will come from the nursery at Higgins Lake and the Hardwood nurseries.

Eight classes of pine can be bought at price increases ranging from $1 a thousand for seedlings to $2 a thousand for transplants.

Included are the first scotch pine seedlings to be offered in 20 years. Also on the list are two-year-old red, white and jack pine seedlings, three-year-old red pine transplants. Only the scotch pine supply is limited.

Landowners may now make applications for their fall supply to the forestry division of the Michigan Conservation Department in Lansing.

GEORGIA FORESTRY PRIZE

The Georgia Forestry Assn., is offering $1,000 as the first prize in a Keep Georgia Green forest fire prevention contest.

B. M. Lufburrow, executive secretary of the Georgia Forestry Assn., said the county showing the greatest progress in woods fire prevention and suppression during the ensuing nine months will win the cash award. The contest began July 1, 1951, and continues until the May, 1952, meeting of the association. The contest is limited to 85 counties which have been cooperating in the fire control system of the association for one or more years.

Purpose of the contest is to reduce the number of forest fires, reduce total acreage burned, stimulate interest in better forest protection and create in individuals a greater sense of personal responsibility regarding forest fire prevention. All counties joining the contest will profit. Prevention of a single fire may save jobs and income far more valuable than the prize. Prize money will be paid the council in the winning county, with the provision that it be spent for the benefit of all citizens of that county.

LAKE MICHIGAN ISLANDS TAPPED FOR TIMBER

ESCANABA, Mich.—Primitive timber on the islands in Lake Michigan is now being felled for pulp and paper mills and plywood plants.

A recent shipment of 100,000 feet of birch, maple, and hemlock arrived here the other day from Beaver Island of northern Lake Michigan.

The timber was cut by the Insula Corp. during the winter at Lake Gennesaret on the island. Tracts there were once considered inaccessible.

The corporation, headed by Joseph B. McNamee, has stumpage rights to two million feet of timber on Beaver Island, 250,000 on High Island, 500,000 on Hog Island, 500,000 on Garden Island, and 750,000 on North Fox Island.

Mr. McNamee says that within the next few years, Insula expects to take pulpwood off Whiskey, Hat, and Squaw Islands.

South Leads In Tree Farming

TALLAHASSEE, Fla. — The Florida Forest Service has recently announced that Nelson B. Blocker of Atlantic Beach, Fla., a forestry consultant, is the first graduate forester in the state to become a certified tree farmer. Mr. Blocker, a member of Forest Managers, Inc., who has a 1500-acre tract near Lawtey, Fla., became the seventy-second to receive the Tree Farm certificate. Although other graduate foresters have acquired Tree Farm certificates for their companies, Mr. Blocker is the first forestry graduate to receive one as an individual.

The Florida Tree Farm program is carried on cooperatively by the Florida State Chamber of Commerce, the Southern Pine Assn., and the Florida Forest Service to encourage landowners to manage their timberlands wisely and profitably. To qualify, landowners must protect their woodlands from wild fires, plant seedlings where necessary, selectively cut their timber, and market their forest products for their best use.

There are now 73 certified tree farms in Florida which total 1,734,158 acres of forest lands. A compilation made by J. C. McClellan, forester of the American Forest Products Industries, Inc., shows that in 10 states of the South there are now 1718 certified tree farmers with a total acreage of 14,190,546. These are as follows:

	Number of Farms Certified	Acreage
Alabama	202	2,341,93
Arkansas	251	3,009,84
Mississippi	304	887,60
North Carolina	69	598,64
Texas	290	3,076,52
Tennessee	270	396,84
Florida	73	1,734,95
Virginia	48	210,14
Georgia	48	914,09
South Carolina	73	1,019,96
Total	1718	14,190,54

That the South has made considerably more progress than the rest of the country in certified tree farming is shown by the fact that it has well over half of the total number of the 3167 to whom certificates have been given in the entire United States and also much more than half of the 23,513,988 acres so designated throughout the country. Other States listed in the report are as follows:

	Number of Farms Certified	Acreage
Idaho	86	630,860
West Washington	70	2,384,844
East Washington	69	452,997
West Oregon	38	1,310,925
East Oregon	22	1,064,520
New Mexico	1	80,000
California (redwood)	11	110,123
California (Western pine)	98	726,412
Montana	46	852,674
Michigan	250	634,808
Minnesota	100	11,879

	Number of Farms Certified	Acreage
Wisconsin	10	597,937
Missouri	21	95,873
Ohio	236	16,810
North Dakota	65	37,134
Rhode Island	23	3,410
Pennsylvania	127	113,452
Maryland	2	1,867
Massachusetts	30	11,601
New Hampshire	29	10,941
New Jersey	17	9,971
West Virginia	38	125,201
Totals outside South	1449	9,323,442

ASSOCIATIONS

CONN. VALLEY SUPTS. OUTING

Connecticut Valley Division, The American Pulp and Paper Mill Superintendents Assn., 1951 Fall Meeting is to be in the form of an outing to be held October 13 at Berkshire Inn, Great Barrington, Mass.

The program for the day opens at 10:00 A.M. with a plant visitation at the Clark-Aiken Co. (East Lee, Mass.) A business meeting of the officers is to immediately precede the luncheon at the Berkshire Inn.

The afternoon, following the luncheon, will be given over to a golf tournament for the men; and to bridge and canasta for the women. Clarence Hecker of Crane & Co. will be in charge of the golf tournament; Mrs. Alfred Montagna, of the women's activities.

There is to be a cocktail party from 6:30 to 7:30 P.M. with a dinner-dance following to complete the outing.

LAKE ERIE SECTION MEETING

July 20th was a busy day for the Lake Erie Section of TAPPI. The day started with visits to the Ohio Match Co. in Wadsworth and the Jaite Co. in nearby Jaite, Ohio.

At the Ohio Match in Wadsworth, about 30 of the 75 attending the outing were treated to a very complete tour of the match company operations from forming the matches themselves to the printing of the cover stock. The visitors saw many interesting operations including the manufacture of regular wooden matches as well as the more commonly used paper book matches. Rotogravure printing, continuous web typographic, and flatbed letter press printing were observed. Considerable interest was centered in the high speed automatic packaging lines.

A smaller group visited the Jaite Co. where the visitors saw the two fourdrinier paper machines in operation making stock for the multi-wall kraft bag plant.

Among the distinguished visitors was Ken Geohegan, president of TAPPI, who spoke at the luncheon.

The principal subject discussed was the program for the 1951-1952 season. The dates of these meetings and the subject matter are:

Oct. 19—Why Converters Aren't Satisfied.

November 16—Does a Training Program Pay?

Dec. 21—Christmas Party.

Jan. 18—Tomorrow's Industrial Protective Packaging. A Symposium—5 Speakers.

Feb. 15—Cashing In on Suggestion System.

March 21—Graphic Arts.

April 18—Practical Process Controls for Better Quality.

May 16—Folding Carton Meeting.

July 18—Summer Meeting.

It was decided that there would be a minimum of two speakers per meeting, and that the meeting would be at the Hickory Grill in Cleveland.

BOX MFRS. TO MEET

Annual meeting Central division, National Paper Box Manufacturers Assn., will be held at Shawnee Inn, Shawnee-on-the-Delaware, Pa., September 13-16. Approximately 250 setup paper box manufacturers and suppliers to the trade have registered for the meeting. There will be two business sessions on mornings of September 14 and 15.

First business program will open with an address by Douglas T. Neale, president of Edwin J. Schoettle Co., Philadelphia and president of National Paper Box Manufacturers Association. Other speakers that morning are Milton Milestone of Acme Paper Box Co., Philadelphia; Walter W. Matthews, executive director, Philadelphia Safety Council; Harold K. Reifsnyder, vice-president, High Production Machine Co., Philadelphia and Claude W. Waters, vice-president, Cardinal Boxes, Inc., Philadelphia.

First speaker the following morning will be Walter P. Miller Jr. of Walter P. Miller Co., Philadelphia, followed by Casimir A. Seinkiewicz, president Central-Penn National Bank, Philadelphia and Vice Admiral E. Dorsey Foster, USN.

NORTHWESTERN FALL MEETING

Mace Harris, The Northwest Paper Co., Cloquet, Minn., Chairman of The American Pulp and Paper Mill Superintendents Assn., reports, as of August 22, 225 reservations at Northern Holiday Resort, Marenisco, Mich. for the 1951 Fall Meeting of the Division. The dates for the meeting are September 14-15.

Three papers are on the program of the technical session.

Paul H. West is going to tell about barking and chipping 8-foot wood at Thilmany Pulp & Paper Co., Kaukauna, Wis.

Bruce Armstrong is going to tell about a new pulp press that is being built by Jackson & Church Co., Saginaw, Mich.

Paul Boronow of Valley Iron Works, Appleton, Wis., will discuss paper formation and the Valley Inlet.

SOUTHWESTERN MERCHANTS MEET AT AMARILLO

The fall convention of the Southwestern Paper Merchants Assn. has been set for October 25th and 26th at Amarillo, Texas at the Herring Hotel.

Mr. Gabriel J. Ticoulat, Assistant Deputy Administrator of the Chemical, Rubber, and Forest Products Bureau, will be principal speaker, speaking at the luncheon meeting Friday, October 26th.

DISCUSS GOV. REGULATIONS

"Government Regulation Affecting the Paper Industry" will be one subject for discussion at a special industry conference of controllers of companies in the paper products field, to be held in conjunction with the 20th Annual Meeting of the Controllers Institute, scheduled for September 30 to October 3, in the Waldorf-Astoria, New York. The speaker on this subject will be Dr. Louis T. Stevenson, economist, American Paper and Pulp Assn., New York.

The industry session, which will take place Tuesday afternoon, September 2, will also include a panel discussion on "Internal Control Techniques." The panel members include: Stuart W. McLaughlin, comptroller, West Virginia Pulp & Paper Co.; and Theodore E. Bruning, treasurer, Oxford Paper Co., both of New York; and W. M. Carnye, controller, Scott Paper Co., Chester, Pa.

R. N. Wallis, assistant treasurer, Dennison Manufacturing Co., Framingham, Mass., will preside at the session and conduct the panel, assisted by Homer L. Dillard, controller, Champion Paper & Fibre Co., Hamilton, Ohio.

SUPPLIERS

AMERICAN CYANAMID CO. has named Sheldon T. Dahl West Coast Manager of the Industrial Chemicals Division and Plastics and Resins Division. He will direct the two divisions' sales and production activities in the West Coast territory.

The company also has promoted Herbert G. Pratt to manager of the San Francisco office of the Industrial Chemicals Division.

THE BABCOCK & WILCOX TUBE CO.'s Pacific Coast office, formerly located at 714 Olympic Blvd. in Los Angeles, will now be in much larger quarters in the Lawson-Chipman Building at 1111 Wilshire Blvd.

ELECTRIC PRODUCTS CO. of Cleveland, Ohio, announces that Harold J. (Tommy) Thompson has joined their Chicago, Ill., agency. Associated with the Hooper-Green Co., Mr. Thompson is specializing in handling the Electric Products Co. line of synchronous and induction motors, a-c and d-c motors and generators, electrolytic power supplies and frequency changers.

(Continued on page 27)

GOVERNMENT GOSPEL

Tighten MRO Regulations

WASHINGTON, D. C. — Regulations governing procurement of MRO items have been tightened by NPA to provide that a manufacturer cannot order or receive more than 40 percent of his quarterly quota of MRO items during the first month of any quarter. Quarterly quotas are based on 120 percent of dollar value of MRO purchases.

May Limit Bidding on Forest Timber

WASHINGTON, D. C. — Bidding on sales of national forest timber could be limited to operating mills within 25 miles of such timber, under a bill by Representative Allen, Dem., of La.

Under this bill, H.R. 5021, referred to the House Agriculture Committee, the Secretary of Agriculture would be authorized to restrict bids on sales of less than 1 million board feet, but the restriction is permissive, rather than mandatory.

Book Paper Ceilings

The Book Paper Industry Advisory Committee recommended that the Office of Price Stabilization issue a tailored regulation for their industry which would spell out dollars and cents ceiling prices on seven key grades of book paper.

Ceilings on other grades and variations in finishing, packaging, trimming, size of shipments and other particulars would be determined by differentials existing under the General Ceiling Price Regulation, except for long-term contract prices, which would be determined by the differentials existing from January 1 to June 24, 1950.

The proposed spelled out ceilings would be arrived at by the "bulk line" technique and would be equal or greater than the ceilings on the bulk of production in the respective grades as determined under the Manufacturers' General Ceiling Price Regulation, CPR 22. The bulk line ceilings recommended would be several percent higher than weighted average of CPR 22 ceilings.

Committeemen recommended that there be a clear delineation between coated groundwood and book papers and that manufacturers be permitted to follow their historic pricing customs in determining where to price certain papers that might qualify as either.

Members of a nine man subcommittee met for the sixth time with OPS officials in the morning and made detailed recommendations on the wording and ceilings in the proposed regulation. In the afternoon the main committee met for the second time and approved with minor changes the recommendations of the subcommittee.

If any changes in OPS policy resulting from recent legislation require a major deviation from the committee's recommendations, the committee expressed a desire for further discussions before OPS issues a tailored regulation.

Committeemen said they could price their products on a reasonably satisfactory basis under CPR 22 and might recommend that their industry continue under CPR 22 rather than a tailored regulation substantially different from that recommended.

Individual members objected to recommending any ceiling prices prior to the establishment of firm ceilings on waste paper used in the manufacture of their products.

Export Price Control

OPS has clarified provisions of its export regulation, CPR 61, affecting sales made after July 30, 1951, and completed before August 26, 1951.

It did this by announcing that on all such sales, the seller is granted the option of pricing either under CPR 61 or any other applicable regulation, including the General Ceiling Price Regulation.

In making its announcement, OPS restated the provision that all sales made after July 30, 1951, for delivery after August 26, 1951, are subject to CPR 61, and that filings of markups under CPR 61 must be made within 15 days after first sale of commodity or product line. A seller may file markups determined under CPR 61 prior to a sale under that regulation.

CPR 61, the export regulation, provides that American exporters may not add more than their pre-Korean percentage markups to domestic prices in selling abroad.

Use Paper Instead of Metal Cans

WASHINGTON, D. C. — Restrictions on use of metal cans must be continued despite a 12-month program just announced, for a record production of these containers, NPA reported this week.

Under the production plan, the agency said, more cans will be produced in that period than in any previous four quarters. However, demands also are mounting it was pointed out, and the supply of cans for less essential products will continue to be held below peak levels to allow for packaging vital products in metal.

Use of paper packages, among others, will help to make up some of these losses, the NPA continued, and where such substitutes can not be utilized, the supply of the products involved may be curtailed in consequence.

Ask Aid In Copper Scheduling

WASHINGTON, D. C. — NPA assistance in solving scheduling problems has been asked by the copper wire and cable mill industry through its advisory group.

Aid is sought chiefly in the situation arising from co-existence of defense-rated orders and authorized controlled materials orders on manufacturers' order books. Manufacturers have no way of determining the extent to which DO orders will be converted to the ACM bracket. Under the present rating system it is possible for DO rated orders of established customers to be displaced by ACM orders converted at an earlier date.

NPA advised the group it is planning to amend M-11, the copper order, to give producers more latitude in scheduling ACM orders.

Meanwhile, the defense agency announced an amendment to its CMP Reg. 1, designed to aid small users of steel, copper and aluminum under CMP. Under the amendment, no manufacturer with a quarterly allotment or advance allotment of carbon steel equal to, or more than a carload lot, is required to reduce his delivery order to below a carload lot. He may order the full carload even though the total permitted for one month under the main order is exceeded.

Manufacturers also may order up to 50 percent of their advance quarterly allotment of steel, copper and aluminum for delivery in any one month for which the allotment is valid.

Groundwood Specialty Paper Pricing

Members of the Groundwood Specialty Paper Industry Advisory Committee proposed that dollars and cents ceilings be spelled out for 24 listed grades of paper.

Ceilings on other grades and variations in packaging, colors, finish, size of orders and other particulars would be determined by customary differentials.

The spelled out ceilings recommended were approximately weighted averages of ceilings reported by industry under the Manufacturers' General Ceiling Price Regulation, CPR 22.

Committeemen requested that if any changes in OPS policy resulting from recent legislation require a major deviation from the committee's recommendations, the committee be called for further discussions before issuance of a tailored regulation.

Grades on which it was proposed to spell out prices:

Printing papers — 45 lb. enamel, 50 lb. A offset No. 1, 45 lb. A offset No. 2, 40 lb. A printing, 45 lb. A printing supercalendered, 40 lb. A 1 printing, 45 lb. A 1 printing supercalendered, 40 lb. A 2 printing, 45 lb. A 2 printing supercalendered, 40 lb. B printing and 40 lb. C printing.

Specific converter papers — 32 lb. canary pencil tablet, 35 lb. carbonizing, 20 lb. B coating, 36 lb. B drawing, 32 lb. B lining and 38 lb. No. 2 hanging.

General converting papers—16 lb. A 1 converting, 16 lb. A 2 converting, 16 lb. B 1 converting and 16 lb. B 2 converting.

General use papers—18 lb. A mimeograph, 32 lb. poster and 14 lb. railroad Manila.

Members of the committee present were: Paul Mahony, International Paper Co.; J. R. Atwater, The Mead Sales Co.; A. J. Gardner, Great Northern Paper Co.; Robert Faegre, Minnesota and Ontario Paper Co.; E. G. Murray, St. Regis Sales Corp.; E. J. Doonan, Gould Paper Co.

Food Container Paperboard Pricing

The Food Container Paperboard Subcommittee of the Special Paperboard Industry Advisory Committee recommended that OPS officials expedite preparation of a tailored regulation for their industry spelling out dollars and cents ceiling prices on standard grades of their products.

Committeemen agreed to do everything possible to expedite return of any information which OPS might request from the industry considered necessary in computing the spelled out ceilings.

The effect of the Capehart amendment on the level of such ceilings was discussed inconclusively. Committeemen spoke of "GCPR prices plus X" as an equitable formula for determining spelled out ceilings but did not undertake to define "X."

It was proposed that food container paperboard be priced in the same regulation with special industrial board and cardboard.

Members of the subcommittee attending were: Russell C. Flom, Marathon Corp.; J. B. Cowie, Hollingsworth & Whitney Co.; and A. C. Black, International Paper Co.

B. P. Altick, Fibreboard Products, Inc., and Wiley L. Jennings, West Virginia Pulp and Paper Co., members of the Special Paperboard Industry Committee, also were present, as was James P. Lewis, The J. P. Lewis Co., invited as a representative of industry.

Remove Control on Sulphur and Carbon Black

The OPS has announced that certain chemical products have been removed from control under the Manufacturers' General Ceiling Price Regulation (CPR22), leaving them under the General Ceiling Price Regulation.

The products, designated in Amendment 23 to CPR 22, effective August 25, 1951, are sulphur and carbon black of the channel, furnace, and thermal types among others.

The transfer of their control from CPR 22 to the GCPR is accomplished by adding them to the excepted products listed in Appendix A of CPR 22.

Sulphur, mined in its natural form, is controlled by the GCPR. Some sulphur, however, is obtained through chemical processes from sour natural and refinery gases and is thus subject to CPR 22. The new amendment places the latter under the GCPR, as it is considered desirable that all sulphur should be subject to the same price regulation regardless of source.

The carbon black industry raw material is obtained under long term gas contracts, and it has been difficult to obtain an accurate measure of the change in the cost of raw materials since the pre-Korea period. Therefore, application of the CPR 22 methods for computing increased material costs to carbon black of the channel, furnace, and thermal types, obtained by the combustion of gas, might lead to unrealistic results. For this reason and because of the apparent adequacy of GCPR ceilings, it was decided to leave carbon black pricing under the latter regulation.

Robin Output

WASHINGTON, D. C.—Rosin production for the period April-July, 1951, constituting the first four months of the current season, totaled 291,390 drums, a decline of 40,290 drums from the corresponding period of 1950, the Agriculture Department reported last week.

Stocks on July 31 comprised 386,440 drums of gum rosin, up 4,550 drums during the month, while wood rosin stocks were up 1,580 drums in the month. Wood rosin output in June comprised 89,120 drums of gum and 115,390, wood, steam distilled; for July, it was 87,260 and 112,390 drums respectively.

"B" Product List of CMP Allotment and Rating Numbers

CMP Allotment and/or Do Rating Symbol	Industry Division
K-5	Building Materials
K-6	Building Materials
K-7	Building Materials
K-8	Chemicals
K-9	Communications Equipment
L-2	Construction & Mining Machinery
L-8	Containers & Packaging
L-9	Containers & Packaging
M-1	Containers & Packaging
M-3	Electrical Equipment
M-4	Electrical Equipment
M-5	Electrical Equipment
M-6	Electrical Equipment
N-4	General Components
N-5	General Components
N-6	General Components
N-7	General Components
N-9	General Industrial Equipment
P-2	General Industrial Equipment
P-3	General Industrial Equipment
P-4	General Industrial Equipment
P-5	General Industrial Equipment
S-2	Printing Publishing
S-3	Pulp, Paper and Paper Board
S-7	Scientific & Technical Equipment
S-8	Scientific & Technical Equipment
S-9	Scientific & Technical Equipment
T-1	Service Equipment
T-2	Service Equipment

Exempt Stamped Envelopes and Paper

The Office of Price Stabilization has exempted from price control sales of stamped government envelopes and the paper from which such envelopes are produced.

The exemption is set forth in Amendment 3 to GOR 2, effective August 25, 1951, and will permit revision of the contract between the Post Office Department and the International Envelope Co., Dayton, Ohio, which is the sole manufacturer of such envelopes and which manufactures no other product.

The contract between the Post Office Department and the manufacturer became effective January 1, 1949, for a term of four years. It provides that if an increase of 20 percent or more occurs in the production costs of the envelope manufacturer or his suppliers of paper, the envelope manufacturer may apply to the Postmaster General for an adjustment to return the same percent of net profit as that enjoyed at the outset of the contract.

The findings of such cost increases are subject to verification by the Federal Trade Commission or other government agency designated by the Postmaster General. A similar provision is made for downward revision of the contract.

The paper used in the envelopes, bearing the government's watermark, is manufactured exclusively for the government by two manufacturers, the International Paper Co., New York, and Howard Paper Mills, Urbana, Ohio.

The envelope manufacturer's prices are at present frozen at the level of October, 1948, when the contract was written.

The government sells the envelopes to the public approximately at cost, plus the value of the postage. Since the primary value lies in the stamp, the cost to the public of any possible upward revision will not be great.

New Ice Cream Container Code

WASHINGTON, D. C.—A new code for pre-packaged ice cream measure containers has been tentatively adopted by the 36th National Conference on Weights and Measures, which was held here last May 22 to 25, the Bureau of Standards reported last week.

The new code provides definitions, specifications for capacities, design and markings, accepted tolerances for both excess and deficiency.

The most important action of the conference, said the Bureau, was a complete revision of the Model State Law on Weights and Measures, which is published by Bureau of Standards and is a guide to the States in weights and measures legislation. Some states have incorporated it entirely, while others have adopted portions of the model law.

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Power and Steam Generation*

Dan Helmick

Helmick & Lutz—Consulting Engineers, Minneapolis, Minn.

The problem of power and steam generation in any industry that uses large quantities of steam for process is fundamentally simple as regards general principles but can become quite involved and intricate when the application of these principles has to be applied to a particular case.

In other words, steam can be produced at any pressure and temperature with a wide variety of fuels, in boilers of various design with several types of firing equipment with a high degree of certainty of the efficiency and service ability that will be obtained. The problem of establishing the characteristics of a steam generating unit to obtain the maximum economic and operating results is something else.

Also, turbo-generators can be secured that will obtain known results for the various steam conditions under which they might have to operate. The matter of establishing the operating conditions for them is therefore the fundamental problem.

The primary premise to be established before any attempt is made to arrive at the required steam characteristics and generator sizes is an exact determination of the actual plant requirements of steam, power and water. This may seem like a foolish statement to make but too many plants have been designed on inaccurate premises or assumptions with the sad result that the new plant could not do what was expected of it.

It is amazing how few plants have even fundamental utility information in an accurate form. In general, accurate data on the following is required.

1. Kilowatt hour consumption and maximum electric demand for 24 hours a day, 365 days a year.

2. Steam required, for plant purposes only, at the various necessary pressures and temperatures for 24 hours a day, 365 days a year.

3. The amount and quality of water required for plant purposes throughout a day and year.

4. Production records of quantity and quality of the plant's output throughout the day and year.

After this data is accumulated someone, and this should be the individual or individuals responsible for future output and production, must establish the changes contemplated in production in order to incorporate the adjustment in utility requirements that may be necessary. Sometimes this is a simple matter but often it is a serious problem since management at times cannot provide the information on a definite basis. In many cases management has come up through the production side of the business and thinks that steam, power, and water are more or less always available in the quantity and quality required. This assumption is seldom true but there have been several cases where the increase or change in production is well under way before someone awakens to the fact that the required utilities are not available.

Most paper mills own or are tied in with hydro-electric power. Unfortunately the availability of hydro power varies widely from year to year and from month to month. In considering the power requirements of a plant, extreme caution should be used in assigning the amount of prime or base power available from hydro plants.

Another intangible has been introduced in the problem of steam and power production by the recent anti-pollution law of the State of Wisconsin. This matter of pollution control is an involved one. Suffice it to say at this time that any decontamination procedure will necessitate additional power and may require or produce additional steam, all dependent on the system that may be adopted.

Another item that must be considered in kraft mills is that of where liquor recovery boilers fit into the general picture. Some mills have installed recovery boilers of high efficiency and high pressure. Others unfortunately still have a multiplicity of relatively low efficiency, low pressure boilers that sooner or later will have to be replaced.

After the basic facts are accumulated, changes in future production determined or guessed at, a realistic view made on hydro power if available, the changes that may be involved in anti-pollution equipment, considered and the matter of liquor recovery boilers settled, the real job starts, that is to make "Heat Balances" for the various combinations of power and steam demands that may have to be met.

A "Heat Balance" in simple words is the determination of the boiler pressure and temperature required to make the economical maximum of power from turbo-generators of the proper design and characteristics as a by-product of the plant's demands for process steam.

Theoretically, it is generally possible to establish an initial steam pressure and temperature that will produce the required power at all times from the plant's demand for steam. Practically this is a dangerous and uneconomic thing to do because a ratio of steam to power may exist at the time the heat balance is made to establish the initial steam conditions but this ratio may be wrong by the time that new boilers are actually installed. Further, the cost of installation of equipment above certain pressures and temperatures may increase the cost to such an extent that the fixed charges on the additional cost exceed the possible reduction in operating costs.

In effect a steam turbine acts as a reducing valve and desuperheater between one pressure and some lower one in the process produces power. The economy of this type of power production is what has brought about the adoption of the present use of high pressure and steam production.

For example, and the following figures are approximately only, if a 2000 kilowatt turbine takes steam at 600 pounds, 700 degrees Fahrenheit at the throttle and exhausts to a condenser at 2" Hg. Absolute, the B.t.u. used or "Heat Rate" per kilowatt generated at full load is 14,200 B.t.u. per KWH or 15,000 at 1500 kilowatts. On the other hand, this same turbine with the same initial steam pressure but exhausting at 125 pounds would consume about 3600 B.t.u. per KWH at full load or 3700 B.t.u. per KWH at 1500 kilowatts.

While these figures vary somewhat with different exhaust or extraction pressures, so long as the steam from the turbine does not contain moisture and within the size limitations generally used in industry, it is in general true that a kilowatt made on a by-product basis consumes only about 25 percent of the B.t.u. that a kilowatt made on a condensing basis does, and therefore, the fuel cost is in the same proportion.

As another example, if a 5000 kilowatt turbo-generator, steam at the throttle at 400 pounds, 750 degrees, operates at full load and 1½" Hg. condensing 71.4 percent of the total

* Presented before the Spring Meeting of the Northwestern Div. of The American Pulp and Paper Mill Superintendents Ass'n., Hotel Radisson, Minneapolis, Minn.

heat input is lost in the condenser, 1.4 percent lost in unit and 27.1 percent converted to power. If this same unit were operated under the same conditions except that fifty percent of the throttle flow was extracted at 5 pounds, 37.2 percent of the heat input would be in the steam extracted to process, 37.0 percent wasted to the condenser, 1.3 percent lost in the unit, and 24.5 percent converted to power. Again, if this same unit were operated at 5 pounds exhaust (no condensing) 80.9 percent of the heat input would be in the steam exhausted to process, 1.0 percent lost in the unit and 18.1 percent converted to power. The above data was taken from DeLaval Steam Turbine Company Bulletin 4200-A.

The combinations of extraction and exhaust or condensing characteristics of the modern steam turbine are almost infinite in their extent. For anyone that may be interested in pursuing this subject further a book entitled *Modern Turbines* by Louis E. Newman of the General Electric Company gives a portrayal of turbine possibilities in a very concise and complete manner.

Normal steam pressures in use in the paper industry vary from 5 to 175 pounds. Generally superheat is a liability and in some cases cannot be tolerated. The pressure or pressures required in most mills are generally fairly well established. Whether a constant temperature is necessary must also be considered because while turbine governors or control will maintain a predetermined pressure of extracted or exhaust steam, the temperature of the steam will vary with changes in electrical load resulting from the shift in the amount or proportion of extracted or exhaust steam. It will thus be seen, that in order to obtain steam without moisture at the lowest extraction or exhaust pressure at full load, study must be given to the thermal efficiency of the unit under consideration as well as the initial steam pressure and temperature.

After the heat balance figures are established and the economical initial steam pressure, temperature and quantity determined, the matter of how to generate the steam must be worked out. There are a wide variety of reliable boiler designs available, the cost of which vary with the design. Probably the first thing to be established is the type of fuel available and therefore the equipment required to burn it. Some plants have coal, gas and oil available at various times of the year, some have coal only. In this connection, with the cost of any fuel as high as it is today, and with the load factor in most mills as high as it is, no boiler unit should be considered that doesn't obtain 80 percent or better efficiency.

Some of the boiler plants installed in the last few years are obtaining in excess of 85 percent average operating efficiency without expending any appreciable amounts for the various super refinements that are available.

If all three fuels have to be burned and quick changeover from one fuel to another is required together with maximum efficiency, a boiler with pulverizers, combination burners and air heater will probably give the best results although the installation cost per thousand pounds of steam will be higher than with other types of equipment.

In general today in most of the northern part of Minnesota, Wisconsin and northern Michigan coal is the most economical type of fuel, but what John L. Lewis will to tomorrow is anyone's guess. Depending on the individual mill location, coal is generally eastern coal from the docks or rail coal from the midwest fields in Illinois, Indiana or western Kentucky. The matter of burning the good grades of eastern coal is relatively simple, with pulverizers, underfeed or spreader stokers able to do an efficient job without too much maintenance expense.

However, to burn some of the midwest coals, if you call it coal, is not so simple. Pulverizers of the ball or roller type give more consistent fineness, which means more consistent efficiency, with less maintenance. Underfeed stokers, even with clinker grinders and water cooled tuyeres haven't proved very satisfactory. In recent years a number of spreader stoker installations, with stationary or moving grates, have been installed with satisfactory results.

With all of these types, consideration must be given to proper furnace design and water walls, and in particular the liberation per cubic foot of furnace shouldn't be too high or there will be trouble when a particularly poor grade of coal has to be burned.

To obtain the high efficiencies that are necessary today, heat recovery equipment is necessary. Air heaters seem to work in better with pulverizers, and economizers better with stokers. Care must be taken in sizing this equipment so that on holidays and week-ends, the final exit gas temperature does not reach the dew point. If it does severe corrosion and fouling may occur.

Pulverizers and spreader stoker installations possess fly ash problems. In any installation, other than out in the wide open spaces, it is general practice to install fly ash eliminators to avoid nuisance law suits and conform with smoke ordinances.

With spreader stokers, particular study must be given to obtain the furnace turbulence necessary for complete combustion with high CO_2, the details of cinder returns and the matter of external erosion of boiler and economizer tubes from fly ash.

A modern boiler unit with air heaters and/or economizers and fly ash eliminators has such a high draft loss that an induced draft fan becomes necessary. While it costs more it is generally good policy to put dual drive on induced and forced draft fans. This is particularly desirable if the boiler is a base load unit and the failure of one drive would shut down not only the boiler but possibly also a turbo-generator or the mill. In addition the ability to shift from motor to turbine drive or vice versa is at times very advantageous in adjusting the plant heat balance.

It may appear to be a foolish statement to make but many power plants are not what they should or could be due to insufficient study and improper arrangement of the necessary auxiliaries and the way they are piped up. Too often these items are bought on a price basis when they should be bought on the basis of obtaining equipment with maximum reliability and maximum maintenance.

Proper boiler feed pumps are of primary importance. Present practice is to use centrifugal pumps but care must be taken in deciding on the metal in the pumps so that it will stand up with the pH that exists in the feed water. There should be sufficient pumps to handle the maximum boiler load with one spare. If possible, it is advisable to have at least one motor and one turbine driven pump.

A proper discussion of feed water treatment could be the subject of an article of indefinite length. Feed water treatment and deaeration are prime requisites for satisfactory boiler operation and minimum maintenance. Most emphatically feed treatment becomes of paramount importance when higher boiler pressures are used.

Treatment should be considered on the basis of the amount of makeup required and the chemical analysis, including color and tannin. Any water can be treated so that it is suitable but the equipment to do it should be decided on only after consultation with some reputable firm of water treatment chemists, preferably one that does not also sell chemicals or equipment.

A deaerating heater that will remove the oxygen down to at least .03 cc per liter combined with a storage section to give adequate reserve feed water supply is a basic essential. It should heat the feed water to at least 212 degrees Fahrenheit but higher temperatures are advantageous, particularly if the boiler has an economizer.

A complete system of steam and feed water metering and combustion control is another essential. There are several good makes available and only the best should be purchased because with the present cost of fuel the best is none too good. A metering system is also required if cost and distribution figures are to be obtained that are anything but a guess.

Coal and ash handling are a pain in the neck in anybody's language. One of the principal problems that occurs is how to unload car coal that has frozen solid in transit. There are

several makes of vibrators on the market but none of them seems to give one hundred percent results. The matter of conveying coal from the track hopper to the bunker can be handled in several ways depending on conditions. In recent years it has become pretty standard practice to make the bunker dust tight and to use a dust tight system, including coal scales, from the bunker to the boilers. Another item that should receive attention in order to get proper feeding and/or distribution in the coal burning equipment is the fact that all coal should be sized down to a minimum size, say ¾ inch. Ring type crushers do a good job on this with minimum maintenance on even the poor grades of midwestern coal. Another matter that should not be forgotten, particularly with spreader stokers, is that coal should be gotten to the stoker with a minimum segregation of large and fine particles.

Ashes can be handled wet or dry depending on how they are to be disposed of. If the boiler room is to be kept clean, as it can be, a totally enclosed and dust type system of handling and storage should be considered.

Unfortunately, when new boilers or equipment are to be installed these quite often must be placed in present buildings which makes it difficult at times to get anything but a "shoe horn" job. If possible, new equipment of this nature should be placed in new buildings that make it possible to get proper elbow room, which in turn insures better and cheaper maintenance with less grousing from the maintenance men.

The question of the type of building exterior may have many answers which from a practical angle vary with the climate. There are available many types of concrete, steel, and asbestos panels, with and without insulation but, everything considered, for permanence and minimum maintenance in this northern climate it is pretty hard to beat standard brick and tile construction.

The exterior architecture of the building varies with the individual case, the public utilities generally being the most willing to spend money for architectural effects. That looks do not pay dividends is a pretty good rule to remember. With the cost of maintenance labor at what it is today it is often better judgment to use second-quality salt glazed tile on the inside and common brick on the outside than to use face brick on the outside and common brick on the inside.

The electric load in all mills has increased year after year. How many mills have revamped their distribution system, substations, load centers and switchgear to safely handle present loads? From observations in many places, if there is anything to the figures given by the switchgear specialists on interrupting capacity of breakers, one wonders why there haven't been more fires and service interruptions.

In considering a new power plant it is also a good idea to check the present electric distribution system and substations and five to one they will be found inadequate.

In considering new generator voltages, 2400 is the minimum. In many cases 4160, 6600 or 13,200 volts has been adopted with distribution at generator voltage to strategically placed load centers in the mill. With a plot plan of the mill it is possible to locate the various points of electric demand and then determine the location for new load centers of an economical size. This may require new secondary wiring to many motors but a large portion of the secondary wiring in many mills should have new wiring to insure more reliable service.

Modern design in switchgear is metal clad with air circuit breakers being used instead of oil circuit breakers. Control panels can be built separate and away from the gear proper which sometimes helps if space and floor limitations prove to be a problem.

Too often the engineer responsible for the design and construction of a power plant gets so wound up in the detail engineering aspects of the job that he forgets the one primary consideration that should be kept in mind, specifically, who are the men who are going to run and maintain the equipment? In many industrial plants management thinks of the power plant as a necessary evil and are at times reluctant to pay for an adequate number and caliber of men to properly operate and maintain the plant. With this in mind, equipment should not be too intricate or involved and beyond the capabilities of the men to run and maintain it.

If the boiler room is to be kept ship shape, some attempt must be made to get away from the dark holes of the past and provide light, air, proper wash and locker rooms, etc., so that the operator will develop a sense of pride in the appearance of the plant and themselves.

Maintenance problems and time are materially reduced if proper advance thought is given to such small items as a manhole in each end of a boiler drum, adequate platforms and walkways and enough room to do the job without standing on your head or hanging by your heels.

Thirty years ago boiler room operators had to have more brawn than brain, they worked 12 hours a day, handled coal in and ashes out by hand with the result that they developed callouses on their hands. Today, things are better for the men and properly so. The eight hour day, mechanical means for handling coal and ashes, automatic combustion and feed water control have changed things so that the average present day operator is more liable to have callouses on his rear end than on his hands. In fact, in some plants they have so little to do that they won't even see to it that bearings are getting the proper amount of cooling water, that firing equipment is adjusted with a change in coal size or grade, etc. Also things go wrong so seldom with present day equipment and controls that are properly maintained that when they do the operator tends to loose his head for lack of knowledge of how to remedy the situation.

All of this leads to the fact that no piece of equipment is any better than the man who operates it. Too much care cannot be given to the selection of a chief engineer who not only knows the answers himself but has the patience and ability to select and properly train his subordinates.

All of the above attempts to touch the high spots of an intelligent study of the facts and equipment pertinent to a modern steam and power generating plant. After they are assembled, the facts should be available which enable one to come to a conclusion as to whether it is advisable to self generate all power and steam, produce a portion of the power requirements and purchase the remainder or purchase all power requirements.

The proper answer cannot be determined without a knowledge of what stand the local utility will take. Years ago the utility engineers tried to prove that the production of power by an industry on a by-product basis was not a practical or economical thing to do. Very few of them take this position any more — there are too many industries that have done it with success. If both the industry and utility are broadminded enough to consider each case on a basis of fundamental facts and economics the answer in most cases is for the industry to install the necessary plant to make all the power it can as a by-product of its own steam demands and for the utility to supply a certain basic minimum demand and kilowatts that the industry would have to make on a condensing basis. This requires parallel operation between the two industries which is a thing some utilities object to. This relationship is generally easier to accomplish where the utility is not too large and the local manager is not too far removed from the top brass that make the ultimate decision.

In conclusion, there are certain basic facts to be constantly remembered when any industry that uses process steam contemplates investing money in new steam and power generating equipment, with or without any connection with the local public utility company.

1. Plants on their own are less liable to shut down, particularly in the summer, than those connected to a utility transmission line. Shutdowns in such industries as paper are expensive.

2. A modern industrial boiler plant

with a high load factor will produce steam as cheaply as a utility plant with the possible exception of the large, high pressure, high temperature, central stations that operate on base load.

3. If the industry fuel or recovery boilers are old and/or inefficient, and with the present cost of fuel, it will sooner or later be necessary to replace them. When this becomes advisable the difference in cost between a 250 pound unit and a high pressure one will not be as much as might at first be expected.

4. A kilowatt made as a by-product of process steam demands will have a purchased fuel cost of only about 25 percent of one made on a condensing basis, whether by the industry itself or others.

5. For every kilowatt used someone must spend a certain amount of money for equipment on which fixed charges and a profit must be earned. If an industry is faced with the necessity of installing new boilers to take care of its own steam demand the additional or incremental cost of high pressure boilers plus electric generating equipment is usually much less than when the total cost must be charged against each kilowatt.

MAINTENANCE—VIII OF SERIES

Productive Maintenance—A Program For Industrial Mobilization

By H. G. McCullough and H. D. Beale

Manager, Service Shop Div., and Manager, Renewal Parts Div., respectively.
General Electric Co., Schenectady, N. Y.

The times are putting American industry to the test with the double-barreled job of production for defense rearmament and production to meet unprecedented civilian needs. They ask the seemingly impossible — more production when capacity has already been reached.

And the possibilities for expansion that were present in 1940, when the nation began arming for the second world war, do not exist today. At the present time, employment is virtually at its peak, and with the armed services requiring additional thousands of young men and women, there are likely to be fewer people, rather than more, to man the industrial front. Without additional employes, plant expansion is meaningless. And, for an extra complicating factor, capital equipment is increasingly hard to obtain.

With the need becoming greater every day, the nation's industries must seek new ways of using what they already have to create extra production. They must get the most from every machine in the shop, using it to its fullest potential. And they must employ every means at their command to remove existing barriers to achieving maximum production.

One of these means is the establishment of an effective maintenance program to keep equipment performing as it was designed to perform — and, in effect, as it has seldom performed before. Management has in many cases paid lip service to the importance of the job being done by the maintenance man in helping to keep equipment in good working order. But too often the job of maintenance is looked upon as a necessary evil — something to be done only when the occasion arises.

This negative attitude has failed to recognize in maintenance its positive productive potential. For, properly handled, maintenance can be a constructive factor in increasing productive output. Looked at in this way, maintenance takes on new significance, as an answer to the nation's industrial mobilization needs. More than routine preventive maintenance, it becomes, truly, *productive* maintenance, capable of creating added output without additional machines.

Believing that productive maintenance offers management a new tool for extending production capacity beyond existing limits, not just keeping those limits as they stand, the General Electric Company has developed a productive maintenance program that can be applied to virtually every type of industry in the country. This program, calling for a thorough and systematized approach to the whole idea of maintenance as a positive rather than a negative force, has the inherent ability to help meet the nation's needs for full industrial mobilization.

What goes to make up a sound productive maintenance program?

An effective productive maintenance program consists of (1) an *adequate staff* of trained maintenance men, armed with (2) the *tools* needed to perform properly the functions of (3) *regular, routine checks* of operating equipment, and (4) *planned outage* of this equipment at regular scheduled intervals. Rebuilding and modernizing machines during time of planned outage is done readily with parts from (5) *an adequate stock of mechanical and electrical spare parts.* These basic points are expanded in subsequent paragraphs.

Management must provide for an adequate staff of trained maintenance men, must make available a budget sufficient to face up to the facts of the situation, and must provide tools and instruments as modern and functional as those supplied production crews. With the men, tools, and money it needs, productive maintenance is ready to go to work. Since the goal is to get the most out of the machines in the plant, it is necessary to know the worth of every machine *to* the plant, how it is expected to perform, and how much attention it demands from

the maintenance man. For this purpose, a card index system, recording brief biographies of every piece of equipment, is kept for handy reference.

The card index system is an invaluable aid in the day-to-day, routine maintenance measures that are, of course, a vital part of the productive maintenance program. The machine biographies guide workers in carrying out preventive maintenance projects, such as periodic inspections, routine cleaning, bearing maintenance, varnish treatments, oiling and the like. Such preventive measures are common enough in most companies. In a productive maintenance program, however, they are conducted under a fixed plan. With the card index as the record of past procedures, a definite schedule for periodically handling preventive problems can be readily worked out and adhered to, with a minimum of time and effort.

Important as the preventive activities are, they are capable, as the term implies, only of *preventing* machines from doing less than they usually do. But the aim of productive maintenance is *added* production, surpassing the limits of output that are already achieved.

Here is the heart of the productive maintenance idea—to overcome as far as possible unscheduled breakdowns of equipment causing delays in production, often when they are least expected or can least be tolerated. By providing for a system of planned outages — planned in advance for the time when the machines can be taken out of service for the shortest possible time — the stoppage will least affect total output and other operating units in the plant.

For the planned outage is designed to replace, as far as possible, the unscheduled breakdown by taking the machine briefly out of service for a thorough, time- and production-saving repair job before it reaches the point where it might break down of its own accord. To do this effectively, a complete, systematic survey is first conducted—of the plant and how it operates, of the equipment, and the role of each machine in relation to the others. Broad in scope, the survey thus analyzes, first of all, the entire operation of the plant. It then determines which equipment is the most critical, which carries the heaviest loads. It goes on to list machines and units in the order of their vulnerability, noting the condition of each—its age, state of repair, severity of duty, and similar factors that will enter into determining the desirability of additional repair and the kind of maintenance required. On the basis of this survey, recommendations can be made for a sound, over-all planned-outage program, and the means can be devised for handling it with a minimum of interruptions to the normal production schedule.

Included as an important part of the equipment survey is the recommendation it gives for stocking an adequate supply of needed renewal parts. By being able to look far enough ahead, by preplanning the replacement parts aspects of maintenance, the problems of delivery delays and temporary unavailability can be largely overcome. This foresight, too, can pay off in terms of less repair-time delay and consequent added production.

The need for increased production throughout industry is great—and setting up a far-reaching productive maintenance program to achieve that added output should not wait. Recognizing this, the General Electric Company has taken active steps to help maintenance men make management aware of the true value of productive maintenance. It provides maintenance men with a kit of tools, a series of aids, as it were, providing the facts and guidance they need to carry out their own productive maintenance program and to convince their management of its necessity for industrial mobilization.

Productive maintenance is for all industry, whether a metal-working plant, paper mill, refinery, steel mill, rubber plant, or chemical plant. And productive maintenance is for every kind of equipment, all the machines that are producing the vital products for military and civilian demands. It provides a means for creating that extra production so critically needed today and tomorrow for the industrial and economic health of the nation.

MAINTENANCE—IX OF SERIES

How to Keep Your Cylindrical Screens at Their Best Throughout the Emergency

B. D. Warren[1]

CONTINUOUS PRESS FELT CONDITIONING IS AN IMPORTANT FACTOR IN MAINTAINING MAXIMUM PAPER MACHINE OUTPUT—HENCE THESE HINTS ON CORRECT VICKERY FELT CONDITIONER OPERATION AND MAINTENANCE

Continuously efficient paper screening is essential to the continuous production of uniformly good quality paper at maximum paper machine speed. The vast bulk of all the paper made on this Continent today passes through Bird rotary screens. Therefore proper screen operation and maintenance is a key factor in attaining and maintaining satisfactory production.

[1] Assistant Sales Mgr., Sales Engineering Dept., Bird Machine Co.

The following suggestions and recommendations represent the composite experience of the men who build and service Bird screens.

Dirt conditions became increasingly difficult in times of tight raw material supply and production stress. Careful screen maintenance therefore pays off particularly well.

Keep the Screens Clean

This means thorough wash-ups at the usual week-end shut-down periods and complete internal scouring out at the time of the general machine clean-up.

All painted surfaces should be kept completely covered with paint.

Before the screen is shut down for any length of time water should be passed through it for a few minutes with the shower pipe operating to prevent stock from drying and hardening on the screen plates or other parts.

The deckle straps or packing bands at the open end of the screen cylinder should be removed and cleaned once

Figure 1—Bird Rotary Screen

Figure 2—Showing the Bird Oscillating Shower Pipe installed in a Bird Screen. Note how open and accessible is the inside of the Screen.

a week. The compartment outside the deckle straps should be filled with fresh water, letting a constant stream of water overflow at the top of the compartment to provide a continuous washing of all surfaces in contact with the deckle bands. This compartment needs to be drained and scoured at each weekly cleaning period.

The deckle straps should be carefully inspected while they are removed for cleaning to see if there are any signs of wear. It is good practice to maintain a spare set and use it alternate weeks. The accompanying sketch shows the adjustments for holding the open cylinder head firmly in its bearing. They should be checked once a week and tightened if necessary. If they are allowed to become loose, screen capacity is reduced with consequent inefficiency of dirt removal because the cylinder is allowed to move in unison with the vat. Keeping these adjusting blocks in correct position makes all the difference between quiet, efficient operation and screens that work hard, almost to the point of overflowing.

Lubrication

Check the level of cylinder oil in the worm gear drive once every eight hours. The petcock on the side of the gear case determines the proper level. To fill, remove the eye-bolt on top of the case and add oil until it appears at the opened petcock.

Grade of oil recommended for this service by the respective manufacturers is as follows:

Gargoyle Cylinder Oil 600W
Terresso 80
Gulf Acorn Cylinder Oil B or Senate Oil A
Texas THUBAN "H" or Texas Cylinder Oil
Alemite SAE No. 160 (E.P.)
Tycol E. A. Cylinder Oil
Keystone Lubricant SR No. 2
N.Y. & N.J.—K—No. 107

On earlier, spur gear-driven models, gears should be thoroughly slushed every eight hours.

Main and Eccentric Bearing

Recent models are equipped with 4-ounce automatic pressure grease cups. If the supply of grease fed to the bearings is inadequate refer to the lubricant manufacturer. Heavier grease cup springs can be supplied if necessary.

On earlier models, each grease cup should be given at least one turn every eight hours.

Grease recommended for this service by the respective manufacturers is:

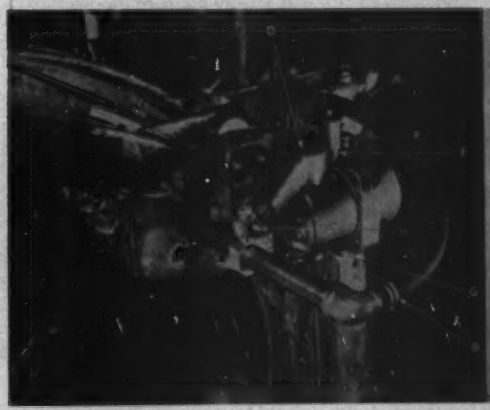


Figure 3—Bird Oscillating Shower Pipe. Close-up of operating mechanism. Figure 4—Bird Oscillating Shower Pipe showing Cuno Filter.

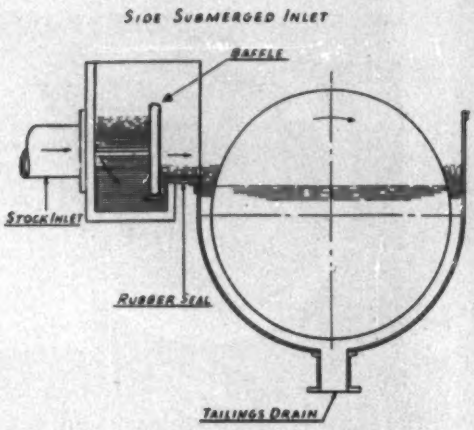


Figure 5—Bird Screen, side submerged inlet, the standard screen feed today.

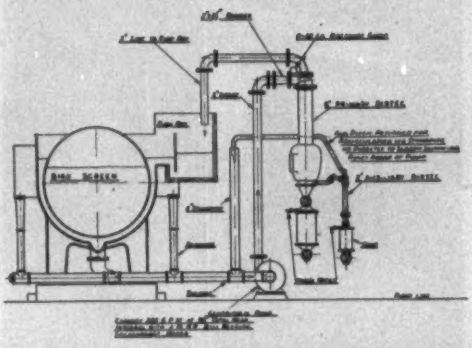


Figure 6—This Bird Screen Tailings system permits continuous flow of tailings from skimming compartments. Two or three times the volume of tailings are handled than can be put through an auxiliary screen. One 6" Dirtec and 2" auxiliary Dirtec and a pump per Screen. Fibre loss is insignificant—a half pound per ton of paper at most.

Gargoyle Grease AA No. 2
Castroleum No. 1
Gulf High Pressure Grease
Master No. 4 Cup Grease
N.Y. & N.J. A-29
Keystone Pressure Grease
Texaco Cup Grease No. 1 or Texaco Cup Grease No. 00
Alemite Automatic Cup Lubricant
Tycol Grease No. 21

Main Cylinder Bearing

Use same grease as for main and eccentric bearings. A small amount supplied at the time the automatic pressure cups are filled should be sufficient.

Motors

Should be lubricated in accordance with the instructions of the motor manufacturer.

The coupling between the motor and cylinder drive should be kept full of oil.

Mechanical Inspection

Inspect all moving parts at each lubrication period. Heating of bearings should be reported, the cause determined and adjustments made at once. Watch for excessive play, vibration or noise, and see that the cause is promptly eliminated. See that all bolts and nuts including foundation anchor bolts are kept tight.

Check the *main shaft bearing* and keep it well set up, rebabbitting whenever necessary.

Check *eccentric cams and bushings.* At first sign of wear, lost motion or knocks, remove shims. Keep eccentric and shaft snug at all times.

On dual drive screens, inspect the *V-belts* for tension and wear.

Make sure that the screen vat is lined up with the cylinder. If out of line the screen cannot operate at full capacity.

Care and Handling of Screen Plates

For maximum dirt removal efficiency it is important to use the finest width of screen slot consistent with the type of fibre, the volume of stock and the capacity of the screening installation. For a given tonnage it is of course necessary to use slots of sufficient width to get the stock through, considering the size of screen available. Using a finer slot in such cases means forcing the screen and results in dirtier paper. Be sure you are using the right slot width, gauge the slots at regular intervals, and keep them at the proper width and square at the entering edges by wear resistant plating, if possible, or by frequent re-rolling and re-cutting.

Particular care should be observed not to damage screen plates during clean-ups or changes.

The Screen Shower

Proper shower operation has a lot to do with screening efficiency and screen plate life. Clean, open screen slots maintain their sharp, smooth edges much longer. Improper shower operation permits accumulation of fibres in the slots.

The Bird Oscillating Shower Pipe, Figure 2, is now being widely employed not only on new screen installations but to replace the old type shower pipes in existing screens. It does a completely thorough job of scouring the plates and keeping the slots open and it does the job with a small fraction of the volume of shower water used by the ordinary pipe. This means better employment of water right through to the paper machine and the save-all system, permits greater flexibility in the use of make-up water and reduces the load on the Save-All, increasing fibre recovery efficiency.

Where stock is run at high temperatures the conservation of water and heat is an important economy factor and mills operating in cold climates find it an advantage to use oscillating shower pipes. This type of shower is especially useful when starting up, because of the decreased volume of cold water.

The area inside the screen is more open and accessible, as the picture shows. A lot of parts and piping are eliminated.

The Bird oscillating shower employs stainless steel nozzles, 1½" apart and with .025" dia. holes. There are 64 nozzles per 100 inches of screen. It is operated by a flexible drive that runs from the eccentric shaft of the screen. It employs fresh water at between 90 and 100 lbs. pressure. G.P.M. for 64 nozzles is only 9.09 at 100 lbs. pressure as compared with 43.0 of fresh water (73.7 of white water) for the ordinary 32 hole shower at 40 lbs. pressure.

The Bird oscillating shower is easy to maintain. Older models are equipped with a strainer *(*A, *Figure 3)* and new models with a Cuno Filter (A, *Figure 4*). Either type should be cleaned as often as necessary to keep it unclogged. If at any time any nozzle gets plugged the shower pipe is readily removed while the screen is operating. Referring to *Figure 3,* the hose is disconnected at "B," nut "C" is removed at "D". The pipe can then be pulled out, the plugged nozzle removed and cleaned.

Lubrication is required at only three points—the sleeve on one end of the oscillating lever, the gear case containing the oscillating mechanism, and the flexible drive shaft. The sleeve is lubricated through grease fitting "H," *Figure 3,* or B, *Figure 4,* with Alemite G-6 or its equivalent. The gear case is filled with 600-W lubricant or its equivalent, through oil pipe "E," *Figure 3,* after removing cap "F." The oil in the gear case should be removed and replaced periodically through plug "G," *Figure 3.* The core in the flexible

shaft should be lubricated every three months. A coupling is set-screwed to the pin on the cap at the end of the screen eccentric shaft. Remove this and the adjacent sleeve which screws to the metal casing of the shaft. The core may then be pulled out of its rubber covering, cleaned and brushed with a light film of grease, Texas Cup Grease No. 907 or equivalent. When replacing, the core should be turned through the sleeve at the end in order that the pin at the gear case end will be properly connected.

The Bird Self-Cleaning Shower Pipe, with which many screens are equipped, requires pressure of 25 to 60 lbs., depending on the grade of stock and fineness of slots. It is desirable to have a pressure gauge on the shower line directly ahead of the screen.

The shower pipe is in operating position when the self-cleaning handle or lever is at its full distance *towards* the screen. When the handle is moved *away* from the screen it is in cleaning position.

Screen Feed

The side submerged inlet *(Figure 5)* has been the standard screen feed for a number of years. It has so many operating advantages that veteran screens still operating with any other type of inlet should be changed over, as this is readily and inexpensively accomplished. This side submerged inlet is easily accessible for cleaning and inspection.

Screen Tailings

The relatively large proportion of dirt that is to be found in many stocks today makes it particularly important to remove the tailings continuously and completely.

The Bird screen is designed so that there is no screening action at the bottom of the screen where the heavy dirt collects. A continuous flow assures complete removal of this dirt and it is important to make sure that the dam in the tailings control box is properly adjusted to provide this flow. When there is no flow of tailings or the flow is not fast enough to take care of any increased dirt that may occur with changes in grade, dirt piles up and eventually gets into the stock.

Light dirt floats between the screen cylinder and the vat and works its way toward the discharge end. Compartments with adjustable gates that provide a slight overflow remove this dirt.

The tailings discharge pipe should be thoroughly flushed at every clean-up period.

The standard and by all odds the most satisfactory and effective tailings system is that shown in *Figure 6*. All the tailings from the bottom of the screen and from the skimming compartments go to this Dirtec unit, the dirt is removed and the clean fibres returned directly to the screen.

The Dirtec handles two or three times the volume of tailings that can be put through an auxiliary flat screen. This results in greater dirt removal efficiency because there is no chance for dirt to accumulate and get back into the screened stock. One 6" primary and 2" auxiliary Dirtec and a pump are employed per screen.

This simple tailings system positively removes the dirt and virtually eliminates loss of good fibres—a half pound per ton of paper is the most fibre that remains in the dirt taken from the Dirtec unit.

Screen users who are not already employing this Dirtec tailings system will find it advantageous and profitable to replace their old type method with this modern and efficient set-up.

SUPPLIERS

(Continued from page 16)

J. P. Casey

Dr. P. R. Shildneck

A. E. STALEY MANUFACTURING CO., corn and soybean processor, have announced that Dr. Paul R. Shildneck, research director since 1947, has been named assistant technical director. In addition to his new duties, he will continue to supervise research activities. James P. Casey, associate professor in the pulp and paper department of the College of Forestry at Syracuse University, has been appointed director of the technical service branch of the Staley research organization. Mr. Casey formerly headed the paper mill laboratory in the technical service department.

WYANDOTTE CHEMICAL CORP. announces that Paul W. Blume, former secretary and director of development at Michigan Chemical Corp., has joined the market development staff of Wyandotte.

CORROSION CRIPPLES-MORE WAYS THAN ONE

Valuable products as well as vital equipment are threatened

Corrosion takes its toll in more ways than one—it eats away costly, hard-to-get equipment—wastes man-hours while plants are shut down for repairs—and causes loss of vitally-needed products through contamination.

Every industry suffers from corrosion in some form, yet much of this waste can be avoided by taking these steps:

1. Check manufacturing equipment, storage tanks, and other items exposed to corrosive fumes, acids, alkalies, or moisture.
2. Arrange to protect them with AMERCOAT—the corrosion resistant coatings, each built to conquer specific industrial corrosion problems.

Manufacturers in nearly every industry have found that it pays to protect—protect with AMERCOAT.

AMERCOAT CORPORATION

A division of

American Pipe and Construction Co.

4809 Firestone Blvd., South Gate, Calif.

2-31a

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports
Rolls, contract, per ton ..... ‡ $115.00/116.00
Sheets ..... ‡ 130.00/ —

F.o.b. Mills. C.l. Frt. allowed, dock, N. Y.

Kraft— per cwt., 40# base wgt.
Standard Wrapping Rolls ..... $7.75/ —
No. 1 Wrapping Rolls 8.25/ 8.50
Standard Bag ..... 7.50/ —

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more
Wh. No. 1 Frd. ..... ‡ $2.25 /$2.35
Wh. No. 1 MG ..... ‡ 2.35 / 2.40
Wh. No. 1½ ..... ‡ 1.95 / 2.05
Wh. No. 2 ..... ‡ 1.75 / 1.85
Kraft Anti-Tar 20x30 ..... ‡ 2.12 / 2.25
White Anti-Tar 20x30 ..... ‡ 2.20 / —

Toilet— per case of 100 rolls—1 M sheets
Unbleached 4½x4½ ..... $8.00/$8.25
Unbleached 4½x5 ..... 6.60/ —
Bleached 4½x4½ 10.00/12.50
Bleached 4½x5 ..... 9.85/ —
Per Case of 50 rolls—2000 sheets
Unbleached 4½x4½ ..... $8.00/$9.75
Bleached 4½x4½ ..... 6.95/ —
Per Case of 100 rolls—1000 sheets
Facial, 4½x5, 2-ply $8.95/10.65

Paper Towels— per case of 3750
Wh. Jr. M'tif'd 9½x9½ ..... ‡ $6.40
Br. Sr. M'tif'd 9½x12 ..... ‡ 4.40
Br. Jr. M'tif'd 9½x9½ ..... ‡ 3.90
Br. Jr. Sgl. fold 9½x10½ ..... ‡ 3.95
Bkhd. 7½x11, 24/25 rolls $7.00/7.55

Manila, per cwt.
No. 1 Jute Tag, 100-lb., sheets* .. $20.55/22.55
Reg. Jute M.F. 40-lb., sheets* ... 19.50/21.50
Wrapping Manila 8.75/10.50
Printing Manila 10.50/12.00
* Less usual allowance for rolls.

Gummed Tape— per bdl., 500 bdls. or more
90-lb. 375 ft. GSI ..... $7.20 / —
60-lb. 600 ft. GSI ..... 7.20 / —
35-lb. 900 ft. GSI ..... 8.28 / —
35-lb. 500 ft. GSO ..... 6.21 / —

MARKET WOOD PULP

Third Quarter Contract Prices, Per Short Air-Dry Ton
Varying freight allowances

	*U. S.	Canadian	On Dock Atlantic Ports *Swedish	*Finnish	*Norwegian
Groundwood	$92.50/ —	$895.00/100.00			
Sulfate, Bleached	145.00/ —	190.00/200.00	$230.00/ —	$230.00/ —	$230.00/ —
Semi-bleached Sulfate	140.00/ —				
Sulfate, Unbl.	132.50/ —	145.00/175.00	200.00/ —	200.00/ —	
Sulfite, Bkhd.	140.00/ —	160.00/175.00	225.00/ —	225.00/ —	225.00/ —
Sulfite, Unbkhd.	132.50/ —	150.00/160.00	200.00/ —	200.00/ —	
Sulfite, Unbl'd (Glassine)		164.00/ —			
Soda, Bkhd.	140.00/ —	155.00/160.00			
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwod Screenings	60.00/ —				
Unbkhd Sulfate Siderums	132.50/ —				
Stand. News. Siderums	92.50/ —	106.00 —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards, per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Bkhd. Mis. Ld. Chip	147.50/ —
White Pat. coated .030	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/126.00
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers— White, 20 lb.

Bonds	4 Cnts. per cwt.
100% Rag Ex. No. 1	$70.45/$73.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Cnts. per cwt.
100% Rag Ex. No. 1	$72.65/$73.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers White, 20 lb.

Bonds	4 Cnts. per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Cnts. per cwt.
Watermarked	$20.50/$21.80
Plain	19.35/ 20.80

White Book

Cavereum Coated	Case per cw.
No. 1	$23.90/$24.65
No. 2	22.15/ 23.40
No. 3	21.90/ 22.40
Machine Coated	
No. 1	$18.40/$18.90
No. 2	16.65/ —
Uncoated	
No. 1 Antique (Watermarked)	$19.15/$19.65
Offset	17.40/ 19.90
A Grade E. F.	18.15/ 19.90
A Grade S. C.	18.65/ 19.40
B Grade E. F.	18.40/ —
B Grade S. C.	17.40/ 19.15

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.)

	New York Aug. 27	Philadelphia Aug. 6	Boston Aug. 24	Chicago Aug. 24
No. 1 Mixed Paper	$17.00/ 19.00	$16.00/ —	$17.00/ —	$18.00/ —
Pasteboard Cuts	30.00/ 25.00	16.00/ —	23.00/ —	23.00/ —
Mill Wrappers	30.00/ 30.00	22.00/ 24.00	20.00/ —	22.00/ —
No. 1 News	19.00/ 21.00	18.00/ —	— /19.00	18.00/ —
Over-issue News	28.00/ 35.00	25.00/ 27.00	22.00/ 24.00	23.00/ —
Corrugated Containers	37.00/ 39.00	36.00/ —	36.50/ 38.00	40.00/ 52.00
New Corrugated Cuts	Nominal	38.00/ —	45.00/ 55.00	52.00/ —
Double Kraft Ld. Corr. Cuts	115.00/120.00	105.00/120.00	100.00/110.00	120.00/ —
100% Kraft Corr. Cuts	140.00/165.00	125.00/135.00	120.00/140.00	140.00/ —
Used Kraft Bags	95.00/105.00	80.00/ 85.00	75.00/106.50	60.00/ —
No. 1 Brown Kraft Paper	70.00/ 75.00	90.00/ 95.00	80.00/100.00	60.00/ —
Super Resorted Br. Kraft	100.00/105.00	100.00/105.00	90.00/115.00	90.00/ —
New Br. Kraft Env. Cuts	160.00/180.00	150.00/ —	150.00/170.00	150.00/ —
New Br. Kraft Cuts	150.00/175.00	130.00/140.00	140.00/170.00	140.00/ —
No. 1 Gdwd Shvs.	65.00/ 70.00	50.00/ 55.00	65.00/ 75.00	45.00/ —
White Newsblanks	90.00/ —	70.00/ —	80.00/ 90.00	70.00/ —
No. 1 Flyleaf Shvs.	80.00/ 90.00	70.00/ —	85.00/100.00	100.00/ —
No. 1 Soft Wht. Shvs.	150.00/170.00	165.00/ —	165.00/185.00	175.00/ —
Super Soft Wht. Shvs.	190.00/200.00	175.00/ —	180.00/200.00	185.00/ —
Hd. Wht. Shvs.	185.00/200.00	190.00/215.00	180.00/205.00	190.00/ —
Hd. Wht. Env. Cuts	200.00/245.00	200.00/325.00	190.00/225.00	190.00/ —
New Manila Env. Cuts	140.00/150.00	160.00/165.00	130.00/155.00	100.00/ —
Col. Tab Cards	110.00/120.00	100.00/ —	85.00/140.00	100.00/ —
Manila Tab Cards	170.00/210.00	160.00/ —	160.00/190.00	165.00/ —
No. 1 Mixed Ledger	95.00/110.00	90.00/100.00	77.00/100.00	100.00/ —
White Ledger	130.00/135.00	135.00/150.00	115.00/130.00	125.00/ —
No. 1 Book & Mag.†	41.00/ 45.00	35.00/ 45.00	30.00/ 50.00	22.00/ —
No. 1 Reg'd. Hvy. Books‡	50.00/ 55.00	43.00/ 50.00	50.00/ 65.00	45.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unbkhd. Muslins	21.00
Bkhd. & Unbkhd. Underwears	21.00
Bkhd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.50
No. 1 Blue Overalls	14.50
Suntan Khakis	11.50

Add 10% Dealer Commission

Fancy Shirts	$10.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.25/ 5.00
Thirds and Blues, Repacked	4.00/ 4.25
No. 1 Roofing Rags	nominal
No. 2 Roofing Rags	nominal
No. 3 & 4 Roofing Rags	nominal

Bagging
(Prices to Dealers, f.o.b. N. Y.)
PRICES NOMINAL

	Per 100 lbs.
Foreign Gunny	$5.00/$5.50
Domestic Gunny, No. 1	5.00/ 5.50
Heavy Wool Tares	5.50/ 6.00
Foreign Manila Rope	8.50/ 8.75
Domestic Manila Rope	9.00/ 9.25
Jute Strings	6.50/ 6.50
No. 1 Sisal Strings	8.00/ 8.25
Paper Mill Tares	4.25/ 4.50
Foreign Scrap Burlap	4.25/ 4.50
Domestic Scrap Burlap	4.75/ 5.50
Quotr. Wool Pouches	7.50/ 8.50
New Burlap Cuttings	7.00/ 7.50

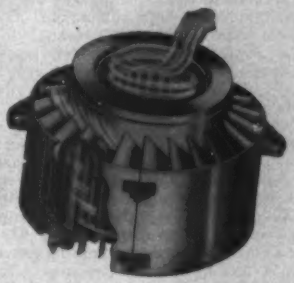
MATERIALS

Aluminum sulfate:		
comm. bags, wks.	cwt.	1.85
iron-free c.l.		3.35
Alcohol, ethyl:		
tax free, dnts. c.l.	gal.	1.01 / 1.03½
denld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dnts. c.l. flt. alld.	gal.	.44
Casein, acid prec.:		
dom. sh. pt. c.l.	lb.	.36½/ .43
imp. ex. dock	lb.	.29 / .40
Caustic soda:		
c.l. wks. solid, 76%, cwt.		3.35
flak. & grd. 100-lb. drums		3.75
liquid 50% tanks		2.55
liquid 70% tanks		2.65
China clay:		
dom. air-float. filler, c.l. wks.	ton	10.00
water-washed, stmp. filler		11.00
coating		17.00 /20.50
imported, ex whse.	short ton	15.20 /18.21
Chlorine:		
single-unit tanks, works	cwt.	2.70
multi-unit	cwt.	3.26 / 4.40
Formaldehyde:		
USP, ink. dnts, c.l. wks.	lb.	.0625/ .0675
l.c.l., E. wks.		.0675/ .0725
Fuel oil:		
Bunker C, No. 6 Cal. ivy tanks, refinery	bbl.	1.95 / 2.15
light	bbl.	2.00 / 2.25
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss.	lb.	.23½/ .26½
Lime:		
hydrated, bags, wks.	ton	13.50
Resin:		
B gum, drms, c.l. Savan.	cwt.	7.00 / 9.00*
G, H, I, K	cwt.	8.37 / 9.49*
FF, wood, dc.	cwt.	6.50 / 7.30
* OPS Ceiling, CPR 53.		
Rosin size:		
70% gum & pale grds. tank cars, south, sh. pt.	cwt.	7.00 / 7.10
Salt cake:		
dom. bulk, c.l. wks.	ton	17.00
wks. frt. all.	ton	20.00 /22.00
Soda ash:		
light, 58%, bags, wks.		1.30
bulk	cwt.	1.20
Sodium silicate 40°:		
turbid. c.l. wks.	cwt.	1.30 /
l.c.l. wks.		1.60 / 1.85
Sodium peroxide:		
dnts. c.l. E. of Miss.	lb.	.21
l.c.l. do.	lb.	.21½/ .22
Soybean, protein:		
chem. ind, wks. c.l. Cinn. and Chic.	lb.	.24 / .28
Sulfuric acid:		
60° Be. cbys. cl. wks.	cwt.	1.75 / —
l.c.l. wks.	cwt.	2.05 / 2.85
Sulfur:		
crude, c.l. mines, contract,	long ton	21.00 /22.00
f.a.b vessels Gulf		22.50 /23.50
Sulfur dioxide:		
liquid, comm. cyl. wks.	lb.	.09
multi-unit cars	lb.	.0535
Starches:		
pearl corn, bags, c.l. wks.	cwt.	6.03 / —
white dextrines, c.l. wks.	cwt.	7.41 / —
potato, Idaho, c.l. wks.	cwt.	5.75 / —
potato, Maine, c.l. wks.	cwt.	6.00 / —
tapioca, conv. dextrines	cwt.	8.00 / 8.75
low, Siam, on dock N.Y.		5.50 / 5.75 nominal
Talc:		
domestic, 50-lb. sacks, c.l. wks.	ton	25.00 /30.00
Titanium dioxide:		
anastase, c.l. dold., bags	lb.	.21 / .21½
l.c.l. dold.	lb.	.22 / .22½
rutile, c.l. dold.	lb.	.23 / .23½
l.c.l. dold.	lb.	.24 / .24½

New Equipment

Internal Type Purifier

The first in a new line of low-cost purifiers is announced. The unit is of the internal type and has a wide range of applications inside steam drums, flash tanks, evaporators, packed towers, bubble-cap towers, deodorizers and stills.



Named Hi-eF Purifier, the unit is guaranteed to deliver vapor with 1.0 p.p.m. or less of total solids regardless of velocities. In operation, entrainment is removed in three stages. The laden vapor enters the top of the purifier as far away from the liquid level as possible, and passing downward in a rotary motion develops a centrifugal force which removes the greater portion of the solids. In the second stage of separation, the rapid rotation is reduced to slow linear flow causing additional amounts to drop out. Further centrifugal force is developed again in the last stage effecting practically complete removal of any remaining entrainment before the vapor continues up and out the evaporator outlet. Discharge is by means of ejects, below the liquid level. The new design is said to eliminate the need for baffling in boilers and drums essential with conventional separators.

Write to Steam Specialty Division, V. D. Anderson Co., 1935 West 96th St., Cleveland 2, Ohio.

Fog Gun

A unique fog gun converts an ordinary garden hose into a mobile and effective inside fire fighting weapon. Nozzle has instantaneous trigger action and a positive shut-off. Using the new gun-type nozzle, a tap pressure of only 30 to 120 pounds will produce an effective fog that will instantly blanket and extinguish small fires—oil, textile, electrical, wood, etc., the manufacturer claims.

The fog gun also is excellent for many factory spraying applications—of water or of tank-stored liquids. Nozzles are available separately, or in a kit which includes adaptors for giving a spray range from the conventional hydraulic spray, through flat spraying to unique mist spray. Sold only through Bete Fog Nozzle Inc., 85 Pierce St., Greenfield, Mass.

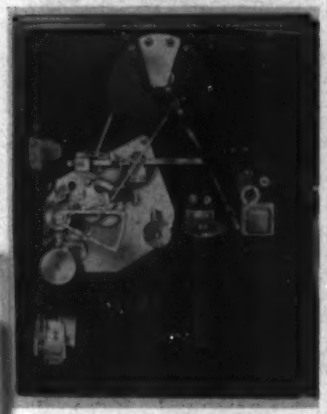
Condensifilter

The Model B. Condensifilter is designed to remove water, oil, sludge and other foreign materials from compressed air. Combining in a single unit a dehydrating device, a mechanical filter and a self-purging trap, the unit provides dry, clean compressed air for operating instruments. Measuring 15" high by 9" in diameter, it has a capacity of 30 c.f.m. at 100 p.s.i.

In operation, air is admitted through the side, directed through the condensing section where it is dehydrated, and then passed through the mechanical filter. Total drop in pressure across the Condensifilter is said to be less than 2 p.s.i. at 100 p.s.i. working pressure. For additional details write to Hankison Corp., 351 Renton Bldg., 1501 Beaver Ave., Pittsburgh 33, Pa.

Evenly Graduated Flow Meter

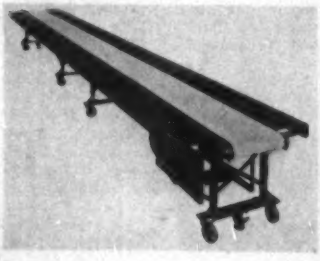
A new type of flow meter which has functional design features an evenly graduated meter scale and electronic integration. It is available either as a mechanical flow meter with integral recorder, or as an electrical transmitter to be used with an inductance bridge receiver.



The new meter is of the differential type, readily installed on a flow line. Meter body is mounted in a convenient location near the line, and the differential pressure lines from the orifice (or other primary element) are piped into the half-inch S.P.T. connections provided on the meter. For electrical transmitting meters, a three-conductor cable is run between the meter body and the remotely-mounted receiver. Cut shows interior of the new meter which is supplied in three ranges: 53, 119.25 and 212 inches of water, and for 750 and 1,500 p.s.i. static pressure. For dry calibration the three ranges are slightly greater. Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Wayne and Roberts Ave., Philadelphia, Pa.

Horizontal Belt Conveyor

A new horizontal belt conveyor for systematic handling of goods during assembly, inspection, and similar operations is in production. Called the Table-Veyor, this new versatile conveyor is designed to bring assembly-line efficiency to production bottlenecks, and is adaptable to a wide range of plant and job conditions.



Length may be varied from 10 to 60 feet by adding 5-foot sections. Width may be varied by a choice of 10, 12, 16, 18, or 20-inch belts. Side leaves that fit on either side of the belt to increase tabletop working space also are available. Write to Rapids-Standard Co., Inc., Dept. TV, 342 Rapistan Bldg., Grand Rapids 2, Mich.

Dry-Type Transformers

A new line of general-purpose, dry-type transformers featuring Class B insulation has been announced. For single-phase, 60-cycle operation, the new design provides smaller transformers at an average weight reduction of 30 percent throughout the line.

These size and weight advantages are obtained, it is explained, through the use of improved core steels and increased amounts of inorganic insulating materials. The insulation withstands higher temperatures in the copper windings—80 C rise over a 40 C ambient—and the corisil core (a grain-oriented, cold-rolled silicon steel) provides comparable losses at higher flux densities, they said. The net result is less copper and steel per kva of output.

Certain ratings of the new line are available immediately and others are being added as quickly as manufacturing facilities can be converted. In all, the line ultimately will consist of about 50 models in ratings of 3 kva and upwards. It will include transformers equipped with two five percent rated-kva taps below rated primary voltage, transformers for 32-volt applications, transformers for boosting and bucking applications, transformers for general light and power service, and autotransformers for general light and power service.

Write to Apparatus News Bureau, General Electric, Schenectady 5, N. Y.

Refiner For Lower Production Jobs

Announced is the 36-1 Refiner for lower production applications. Unit is of the same proven design as the 36-2 Refiner, but is designed to be driven by 100 to 200 h.p. motors, either integral of V-belt drive. The latter drive allows the mill to use a motor on hand, at a considerable saving in the initial cost.

Refiner is of stainless inlaid construction; rotor is solid steel, all parts in contact with stock are stainless steel. Designed for the mill which desires a refiner for a moderate amount of screen rejects, or brushing out paper stock, or for any of the many applications of a disc type refiner. Produced by Sprout-Waldron & Co., Inc., Muncy, Pa.

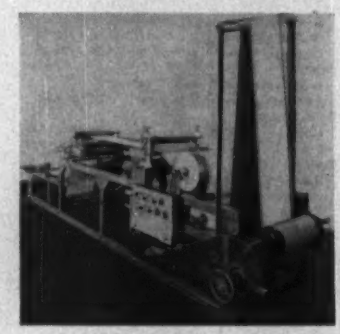
Brush Moistener

Positive pressure moistening is accomplished by the Envolable Moistener through the combined use of the *Brush with a Backbone* moistening unit and the *Duo-Guide*,—which is open on one end to accommodate from the smallest to the largest envelope flaps, and used conventionally for other gummed surfaces. Moistening span is four inches.

Featured also is a locking device which holds the brush and *Duo-Guide* in perfect alignment. Manufactured by A. C. Hummel Co., 5349 Kennedy Ave., Cincinnati 13, Ohio.

Laminator and Rewind

Twenty-inch rolls of fabrikoid and paper are glued and efficiently laminated and rewound on the new laminating machine recently introduced.



Laminated material is run over a heated drum to dry the adhesive before rewinding, and by means of an upright suspension roller travels 16 feet to adjust to room temperature before rewinding. Machine is equipped with a variable speed control, and it is claimed that speeds up to 50 feet per minute are attained. Dimensions are: 38" wide x 130" long x 51" high. Requests for machines other than for 20-inch rolls can be supplied. Potdevin Machine Co., 1285 38th St., Brooklyn 18, N. Y.

New Supplies

Koroseal Electrical Tape

A new type electrical tape made with Koroseal material, and said to have many advantages over ordinary electrical tapes is announced by The B. F. Goodrich Co., Akron, Ohio.

It will not transfer the adhesive from the face, lose its tackiness or ability to adhere, and sticks snugly and securely to itself and insulation around copper wire, the manufacturer stated.

The tape has a dielectric strength of 8000 volts, is waterproof, highly abrasion resistant and flameproof, resistant to acids, oil alkalies and corrosive salts.

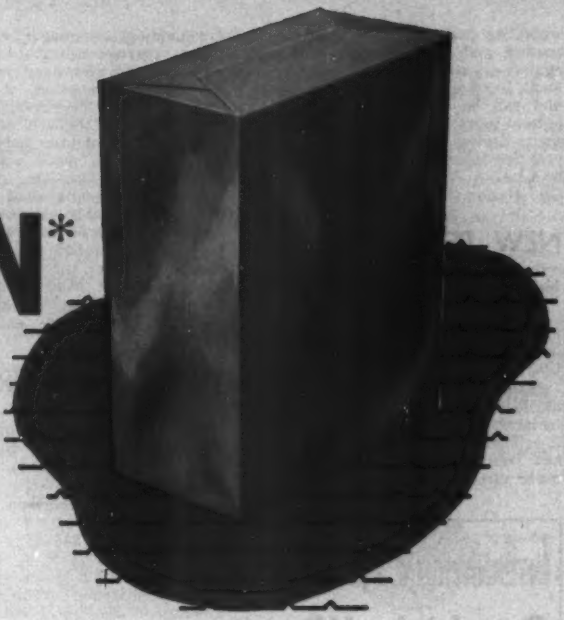
Fungus-Ban Dip For Wood

The new member of the Fungus-Ban family is a copper napthanate dip which imparts a green color to the

Paper coated with ALATHON*

polythene resin

resists scuffing



Coatings of Du Pont "Alathon" polythene resin do more than give a brilliant finish to package paper. These coatings are tough . . . they withstand rough handling without losing their attractiveness. That's why packages made of paper coated with "Alathon" keep their sales appeal over long periods of shelf life.

"Alathon" stops water vapor

Paper coated with "Alathon" becomes a barrier against moisture vapor . . . keeps dry materials dry, moist materials moist. These coatings do not crack or become brittle even at temperatures as low as minus 70°F.—an important factor in packaging frozen foods and ice cream.

"Alathon" is chemically inert

"Alathon" is chemically inert at room temperatures and it's tasteless, odorless and non-toxic. These qualities make papers coated with "Alathon" ideal for packaging butter, lard, bread, meat, and other types of food products. What's more, "Alathon" is an economical coating material to use. Because of its low specific gravity (0.92), one pound of "Alathon" resin will cover 30,000 square inches of paper with a 1-mil coat.

"Alathon" can build future sales for you

Because of its outstanding chemical and physical properties, manufacturers and processors of many kinds of industrial and consumer goods will want paper coated with "Alathon" for their packaging material. Plan *now* to profit with "Alathon."

Present demand exceeds our production. But by planning now, you'll be able to move fast when "Alathon" is available. Write for more information about Du Pont "Alathon" polythene resin . . . or for technical assistance. We'll be glad to help you.

REG. U. S. PAT. OFF.

DU PONT

REG. U. S. Pat. Off.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Polychemicals

DEPARTMENT

CHEMICALS • PLASTICS

E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Delaware

wood, as indication that it has been treated, and gives primary protection against dry rot. This preservative treatment is of a non-crystalizing nature, and can be painted over with ship-bottom paint or normal paint after 24 hours drying. It is made to meet Federal Specifications MIL-W-906 Type 1 or Class A. Write Wilbur & Williams Co., Boston 35, Mass.

NEW PROCESS

Neoprene Beater Treatment

A new and economical way to add synthetic rubber, neoprene, to paper has been developed by the Du Pont Co.

Instead of coating or saturating the finished paper, the neoprene is added in latex form to the pulp just before it is made into paper. The result is a new family of low-cost specialty papers made directly on the paper machine. Outstanding advantages of the new papers are wet strength, chemical resistance, and all-around improvement in physical properties, it is stated. One now under development is a fiber rug. Woven of twisted neoprene tissue. Other possibilities named are disposable diapers, made with soft absorbent paper on the inside wet-strength neoprene-treated paper on the outside; double-wall insulated bags for cold bottles or cans of beer, wall tile backing material, replacing asphalt saturated paper; and in the industrial field as gasket paper, multiwall bag paper, wrapping paper, box board, and industrial filter paper.

INTERNATIONAL WIRE WORKS
Fourdrinier Wires
MENASHA, WISCONSIN

FOR all steam conditions—
SINCLAIR
STEAM CYLINDER OILS
Sinclair Refining Company
600 Fifth Ave., New York, N. Y.

Sandy Hill
IRON & BRASS WORKS
PAPER MACHINERY SPECIALISTS
HUDSON FALLS, N. Y.
Builders of
SANDY HILL, BERTRAMS AND KAMYR EQUIPMENT

APPLETON FELTS
FOR DESIGN AND FINISH!
APPLETON WOOLEN MILLS

NEW LITERATURE

V. D. Anderson Co. 1935 W. 96th St., Cleveland 2, Ohio. Bulletin, "Internal Type Anderson Hi-ef Purifier Scrubber." Describes operation, gives specifications and diagrams.

Abbé Engineering Co., 50 Church St., New York 7, N. Y. Catalog 68, "Abbé Dispersall Mixer for Dispersing, Emulsifying, Milling, in One Operation." Technical and sales copy.

American Hoist & Derrick Co., 63 South Robert St., St. Paul 1, Minn. Catalog No. 400-R-3, "American Revolver Cranes." Interest to persons with large scale material handling problems. Illustrated.

Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis. Bulletin No. 51-81, "Rex Belt Conveyor Idlers and Machinery." Latest designs and developments. Technical and sales copy. Illustrated.

Cleveland Worm & Gear Co., 3293 East 80th St., Cleveland 4, Ohio. Folder, "Cleveland Worm Gear Speed Reducers." Features the type CU unit, built to take punishment of cooling tower service — Speedaire fan-cooled reducer — special units for driving woolen card.

Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio. Bulletin B-11-220, "Four-Circuit Motor Generator Battery Charger." Technical and sales copy.

General Electric, Schenectady 5, N. Y. Bulletin, "Power System Equipment for Pulp and Paper Mills." Steam Turbine Generators; Mechanical-Drive Turbines, etc. Illustrated. Also, Bulletin, "Electric Power for Industry's Third and Biggest Expansion." Outlines methods of obtaining electric power equipment for quick expansion. Illustrated.

Leeds & Northrup Co., 4934 Stenton Avenue, Philadelphia 44, Pa. Folder, ND-91(1), "Air Pollution by SO_2 Recorded By the Thomas Autometer." Lists equipment and specifications.

Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill. Booklet No. 2377, "Up and NRM Vibrating Screens." Includes specific information on how to select the right screen and screen cloth for maximum operating efficiency; dimension tables, weights, horsepower requirements; and other data valuable to the engineer and plant operator. Shows variety of actual installations.

Milton Roy Co., 1300 East Mermaid Lane, Philadelphia 18, Pa. Bulletin, "Controlled Volume Pumps." Uses in the chemical, textile, petroleum, food and beverage, brewing, pulp and paper industries. Illustrated.

National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill. An 800 page book, "Accident Prevention Manual for Industrial Operations." Industrial Poisons; Machine Guards; Electrical Hazards, etc.

Superintendent of Documents, Government Printing Office, Washington 25, D. C. Catalog No. GS 4.109/2: D34, "Handbook of Emergency Defense Activities." Includes brief organizational outlines, and the names and addresses of officials of the emergency defense agencies, the Dept. of Defense, and the United States Coast Guard.

Sytron Co., Homer City, Pa. Bulletin, "New Syntron Electric Hammers and Self-Rotating Electric Hammer Drills." Technical and sales copy.

Yarnall-Waring Co., Mermaid Lane, Philadelphia 18, Pa. Bulletin T-1740, "Steam Trap Selector." Steam Process Equipment; Industrial Space Heating Equipment, etc.

NEW PAPER USES

Paper Umbrella

Rainbelle, the new pleated paper umbrella (with special vinyl-coating finish) which sheds water like a shower curtain, moves into Fall as the ideal high-fashion, low-cost umbrella. It was recently chosen for "its excellence in design" by the Institute of Contemporary Art in Boston, Mass.

After two years of experimentation, the machinery used in the manufacturing of Rainbelle has finally been perfected. A variety of additional industrial and consumer products are being

projected, based on similar paper fabricating techniques and equipment. In less than two months, this paper umbrella has made its appearance in approximately 800 stores from coast to coast, and received excellent consumer commendation.

Paper Blankets for G.I.'s

J. E. Fondahl, Civil Defense Director for the District of Columbia, disclosed that the military is passing out paper blankets to soldiers and is asking Congress for 10,000 of them for Washington's civil defense program.

Mr. Fondahl, in House Appropriations Committee testimony, said the paper blankets are damp-proof, windproof and deteriorate less rapidly than wool.

The blankets cost $1 apiece.

FINANCIAL

Puget Sound Pulp & Timber Co. has declared the regular quarterly dividend of 50 cents a share on the common stock, payable September 28 to stockholders of record September 7, 1951. Including this declaration, distributions to date in 1951 total $2 a share.

GAYLORD CONTAINER CORP.
Summary of Operating Results
Six months ended June 30, 1951

	June 30, 1951
Gross sales of products and services	$84,870,804
Less intra-company sales/purchases	41,043,813
Sales to Customers	$43,826,991
Earnings before taxes on income	$13,229,281
Less taxes on income—estimated	8,201,000
Earnings After All Charges	$ 5,028,281
Earnings in relation to gross sales of products and services	5.9%
Earnings per share of common stock, 2,338,317 shares outstanding	$2.15

Howard Smith Paper Mills, Ltd., which announced recently that it proposed to split its common stock four-to-one, has disclosed that its directors have approved sale of 268,656 of the split shares to Wood, Gundy & Co., Ltd., for possible offering about the middle of September.

The new shares will be offered to existing Canadian shareholders on a basis of one new share for each five shares now held. The directors announced that dividends on the new shares are expected to be $1 a year.

Gaylord Container Corp. declared a dividend of 37½c a share on its common stock payable September 10 to stockholders of record August 31.

International Paper Co. declared the regular quarterly dividends of $1 per share on the cumulative $4 preferred stock and 75 cents per share on the common stock. Both dividends are payable September 24 to stockholders of record August 31.

INTERNATIONAL PAPER COMPANY AND SUBSIDIARY COMPANIES
Statement of Consolidated Profit and Loss

	Three Months Ended		Six Months Ended	
	June 30, 1951	June 30, 1950	June 30, 1951	June 30, 1950
SALES AND OTHER INCOME:				
Gross sales, less returns, allowances and discounts	$162,328,110	$117,659,666	$313,706,916	$230,975,424
Other income—net	1,887,330*	2,534,631*	3,799,655*	4,888,557*
	$164,215,440	$120,194,297	$317,506,571	$235,863,981
COSTS AND EXPENSES:				
Pulpwood, labor, materials, etc.	$ 82,740,881	$ 61,481,293	$158,899,979	$122,058,995
Maintenance and repairs	10,805,567	8,045,514	20,490,903	15,307,642
Taxes (other than income taxes)	2,116,615	1,725,318	4,232,838	3,392,409
Outward freight and delivery expenses	14,383,839	12,559,072	28,057,145	24,089,519
Selling, general and administrative expenses	3,913,544	3,188,034	7,342,148	6,540,323
Depreciation	4,687,748	3,175,734	9,356,612	6,176,787
Depletion	226,906	274,647	454,117	468,262
Provision for taxes based on income:				
U. S. Federal taxes—				
Normal and surtax	18,173,871	9,330,397†	34,620,458	18,088,330†
Excess profits	5,839,016	.....	10,708,510	.....
State taxes	1,003,197	554,737	1,910,825	1,109,492
Canadian and other foreign taxes	4,387,963	3,177,763	9,230,240	5,985,509
	148,279,148	103,712,491	285,933,795	204,017,268
NET PROFIT	$ 15,936,292	$ 16,481,806†	$ 31,572,776	$ 31,846,713†
Net profit per share of Common Stock now outstanding (after dividends on $4 Preferred Stock)	$1.77	$1.83	$3.50	$3.53

* On September 19, 1949, the Canadian Government officially devalued by 10% the Canadian dollar in terms of United States dollars; effective October 2, 1950, the official rate was withdrawn and the Canadian Government announced that future rates would be determined by the supply of and demand for foreign currencies in Canada. All exchange profits and losses have been included in Other Income in the periods during which they were realized. Sales of foreign subsidiaries are made chiefly in United States dollars, while most of their costs and expenses are incurred in foreign currencies, principally Canadian. The Canadian accounts included above do not differentiate between United States and Canadian dollars and have consistently been consolidated on that basis.

† The liability for U. S. Federal Income Tax (normal and surtax) was recalculated during 1950 at the higher rates called for under the Revenue Act of 1950 enacted in September; to give retroactive effect to this change, the originally reported net profit figures for the three and six months ended June 30, 1950, have been reduced by $990,186 and $1,920,527 respectively.

CHAS. T. MAIN, INC.
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Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering Reports, Consultation and Valuations
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EXPANSION PLANNED ENGINEERED
Every phase of your expansion program can be handled efficiently and economically by Ferguson's experienced Paper Mill Specialists.
Preliminary Discussions in Confidence and Without Obligation.
THE H. K. FERGUSON COMPANY
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FIBER RESEARCH AND SERVICE
Semi-Chem. and Chemical Pulp Processes
Pilot Plant Facilities
THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

MISCO
STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

American Writing Paper Corp. net income for the first half of the year was $351,483.85. The figure represents a gain of $242,479.77 over the net income for the same period in 1950.

The report stated that during the initial six months of this year the corporation purchased 3500 additional shares of its common stock, and that a total of 32,800 shares were held in the treasury as of June 30. Directors declared a semi-annual dividend in June of 25 cents per share, it was pointed out. Provisions has been made and is included above for excess profits taxes at current rates on 1951 income to date.

Results of operation for the balance of this year will be influenced in large measure by the integration of operations into the defense effort and the impact of government directives affecting material supply and selling prices of papers.

OBITUARIES

Herbert L. Nichols, 54, general sales manager of Northern Paper Mills and veteran of the first Green Bay Packers' football team, died at Green Bay, August 16. Mr. Nichols, sales association with Northern covered the past 37 years.

H. S. Foley Jr., son of Harold Foley, president Powell River Paper Co., was killed in an automobile crash August 18.

William A. Coryea, 58, a project manager of The Rust Engineering Co., died at his home, 715 Wisteria Ave., Mt. Lebanon, Pa., on August 13 after an illness of many months. He was a national authority on paper mill and on power plant design.

GROUNDWOOD PAPER CEILINGS

Members of the Groundwood Specialty Paper Industry Advisory Committee at their sixth meeting with OPS officials proposed that dollars and cents ceilings be spelled out for 24 listed grades of paper.

Ceilings on other grades and variations in packaging, colors, finish, size of orders and other particulars would be determined by customary differentials.

The spelled out ceilings recommended were approximately weighted averages of ceilings reported by industry under the Manufacturers' General Ceiling Price Regulation, CPR 22.

Committeemen requested that if any changes in OPS policy resulting from recent legislation require a major deviation from the committee's recommendations, the committee be called for further discussions before issuance of a tailored regulation.

Grades on which it was proposed to spell out prices:

Printing papers—45 lb. enamel, 50 lb. A offset No. 1, 45 lb. A offset No. 2, 40 lb. A printing, 45 lb. A printing supercalendered, 40 lb. A 1 printing, 45 lb. A 1 printing supercalendered, 40 lb. A 2 printing, 45 lb. A 2 printing supercalendered, 40 lb. B printing and 40 lb. C printing.

Specific converter papers—32 lb. canary pencil tablet, 35 lb. carbonizing, 20 lb. B coating, 36 lb. B drawing, 32 lb. B lining and 38 lb. No. 2 hanging.

General converting papers—16 lb. A 1 converting, 16 lb. A 2 converting, 16 lb. B 1 converting and 16 lb. B 2 converting.

General use papers—18 lb. A mimeograph, 32 lb. poster and 14 lb. railroad Manila.

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 21	July 28	Aug. 4	Aug. 11	Aug. 18
1951	99.2	99.5r	100.3	99.9r	98.3
	July 22	July 29	Aug. 5	Aug. 12	Aug. 19
1950	96.6	99.9	99.4	98.5	100.0

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	95.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	99.6	91.2	95.8
1951	99.3	101.3	101.9	102 8	102.5‡	100.2‡	89.4‡						

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	87.9	87.8	99.9	103.7	97.5	85.5	94.9	99.8
Year Average	88.1	89.4	101.1	104.3	96.2	88.6	95.8	

PAPERBOARD OPERATING RATIOS†

	July 21	July 28	Aug. 4	Aug. 11	Aug. 18
1951	94	97	94	94	93
	July 22	July 29	Aug. 5	Aug. 12	Aug. 19
1950	95	96	98	99	101

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	102	101	95	94
1951	102	105	104	103	104	103	84						

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

MEISEL MACHINERY IS HELPING IN ALL FIELDS

Cigarette Condenser | Wax Grease Proof | Photographic Snap-out Forms | Jet Propulsion Aero-engine Parts

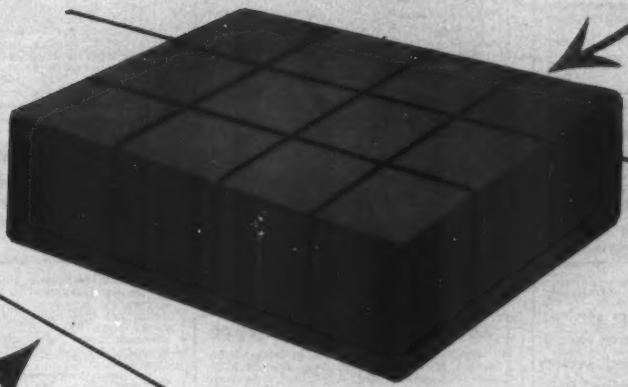
MEISEL PRESS MFG. CO. 950 Dorchester Ave., Boston

Lyddon & Co.

exporters of wood pulp
to all world markets

Parsons & Whittemore

paper exporters
wood pulp



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10 East 40th Street, New York 16, N. Y.

CLEARING HOUSE

HELP WANTED

MEN WANTED—POSITION OPEN

We can place—Production managers (2) one for Cylinder board mill, another for specialty paper mill; pulp and paper mill manager (West); asst. supt. (night); sales procedure supervisor.

Mechanical and plant engineers, also asst. plant engineers; master mechanics; chemists and chemical engineers; designers and draftsmen; sales engineers; pulp mill foreman; tour bosses Yankee and Fourdrinier machines; beater engineers; machine tenders, back tenders and third hands.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES

A-31

WASTE PAPER BUYER

National organization needs experienced waste paper buyer for Mid-West paperboard plant. Excellent opportunity for advancement with growing company.
Send complete details of experience and personal history.
Address Box 51-448 care Paper Trade Journal. S-14

We are interested in locating sales representatives to handle defense packaging materials along the East Coast. This offer would be attractive to a salesman already calling on prime and sub-contractors inasmuch as sales contracts would be established—and our line of material would be added "gravy." Address Box 51-447 care Paper Trade Journal. A-31

Well-known manufacturer of paper finishing machinery requires services of a competent representative to call on the industry. Must be well versed in paper making and finishing. Previous sales experience desirable but not essential. All replies confidential. Reply in detail giving experience and salary required. Address Box 51-449 care Paper Trade Journal.

A-31

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-87 care Paper Trade Journal. TF

TOUR BOSS for Fine Paper Mill; also Machine Tenders for mill located in Eastern part of New York State. Address Box 51-428 care Paper Trade Journal. A-31

HELP WANTED

PERSONNEL SERVICE ASSOCIATES

115 State St., Springfield 3, Mass.

Personnel Consultants

Confidential placement service for employers and employes in the pulp and paper industries and allied trades.
Domestic Foreign.
A-31

PAPER CONVERTING

We want the services of a man who knows how to supervise production and control quality of printed, coated, laminated and embossed papers. Experience with fluid and oil inks, coatings and adhesives is necessary. A working knowledge of chemicals and converting machinery will be helpful. There is an excellent salary and bright future for the right man in this job. If you are interested write, giving your complete work history and all other necessary details. All replies will be kept confidential. Our organization knows of this advertisement. Address Box 51-440 care Paper Trade Journal. S-7

CHIEF DRAFTSMAN

Old established paper machinery manufacturer located in the middle west desires a chief draftsman. Man with engineering degree preferred but not necessary. Experience essential and must be experienced with paper mill machinery. Must be able to lead men and obtain good production at a reasonable cost. Permanent. Give complete information in your letter. Write Box 51-441 care Paper Trade Journal. S-14

ASSISTANT MILL MANAGER

Opening available for the position of Assistant Mill Manager in large Eastern Canadian Newsprint Mill. Applicants must have proven executive and operating ability and be capable of assuming charge of all mill operations. Excellent opportunity for advancement to higher executive position with sound progressive company. Housing in Company townsite.
Age requirements 28 to 35 years.
Applicants please give complete details of experience and personal history. All replies confidential.
Box No. 51-401 care Paper Trade Journal. A-31

TOUR BOSS WANTED

Must be mechanically inclined for cylinder paper machine. Write giving full particulars of background and salary expected. Box 51-431 c/o Paper Trade Journal. S-7

HELP WANTED

SALARIED POSITIONS $3,000 to $35,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards in individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

MACHINE TENDER WANTED

for cylinder machine. Must be experienced. Excellent working conditions. Apply Box 51-432 c/o Paper Trade Journal. S-7

WANTED—Master Mechanic or Assistant for modern 3-Machine Tissue Mill. Progressive management; expansion program now under way. Fine opportunity for young/midle aged man to advance. Substantial paper mill mechanical experience with electrical background desirable. Give complete resume of experience in letter to Box 51-442 care Paper Trade Journal. Replies held strictly confidential. TF

WORKING PAPER MILL MECHANIC

Must have previous experience on cylinder machine. Good opportunity for right man. Apply Box 51-430 c/o Paper Trade Journal. S-7

WANTED—Young Chemical Engineer with some experience in pulp and paper manufacture for important research in pulping. Position may lead to new large industrial development. Give full details education, experience, personal data. Salary commensurate with experience. Address Box 51-414 care Paper Trade Journal. A-31

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill, Fourdinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470, TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

SITUATIONS WANTED

EXECUTIVE ACCOUNTANT COMPTROLLER

Capable, cost minded administrative executive, age 40, available immediately. Fully experienced in multi-plant paperboard, folding carton and printing industry. Box 51-197, Paper Trade Journal. S-7

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $3.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $3.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $3.50.

Classified advertising space may also be purchased at $3.00 per single column inch. All classified advertisements are payable in advance.
If box number is used—70 cents additional
Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 18 West 45th Street, New York 18, N. Y.

SITUATIONS WANTED

WASHINGTON REPRESENTATIVE

and Staff Executive. Successful record of accomplishment in Washington, and in Sales and Administrative functions. Pulp, Paper, Specialties. Energetic and versatile. Now employed. Seeking permanent connection. Address Box 51-413 care Paper Trade Journal. NC-S-7

PLANT MANAGER—Paper and Board and their conversion; wants challenging opportunity. Highly successful in organization; administration; labor relations and high level production. Presently employed. Address Box 51-43 care Paper Trade Journal. A-31

MANAGER OR SUPERINTENDENT—B.S. Degree, twenty four years in supervisory capacity manufacturing fine papers and specialties. Highly successful in organization, labor relations, maintenance, installation. Maximum production and quality at minimum cost. Motto —"It can be done." Excellent references. Address Box 51-445 care Paper Trade Journal. S-14

SITUATIONS WANTED

SUPERINTENDENT THIRTY YEARS OF PRACTICAL EXPERIENCE MANUFACTURING HIGHEST GRADES light and heavy weight papers on modern high speed Cylinder and Fourdrinier machines folding box board, kraft, book and bond specialties from sulphite and sulphate, groundwood, de-inked papers. Can get quality and production. Best of references. Address Box 51-415 care of Paper Trade Journal. S-7

FOR SALE

FOR SALE

Langston 96" type "B" Shear Cut Slitter and Rewinder, 50" Diameter, fine condition, immediate delivery. THEO. ADAMS, 111 W. Washington St., Chicago 2, Ill. S-7

FOR SALE

PAPER MILL EQUIPMENT

74" Cameron type 8 model 16 Slitter.
75" Moore & White Rewinding Reel.
52" Cameron type 8 model 5 Slitter.
48" Kidder type CH Rotary Slitter.
30" Hobbs shear cut Slitter.
42" Moore & White Sheeter with Layboy.
49" Finley Sheeter with Hamblet single pile Layboy.
38" Finley Sheeter.
100" Dillon Sheeter with 10-roll Back-Stand.
38" Acme Automatic Power Paper Cutter.
#15 Industrial Paper Shredder.
NEW Hamblet Sheeters, any specification.
NEW Balers, both hand and power.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.)
TF

FOR SALE—2 Sandy Hill 60/ four knife Disc Wood Barkers; 8 plate Packer Screen. Address Box 51-444 care Paper Trade Journal. S-7

MACHINERY WANTED FOR OUTRIGHT PURCHASE
Paper Machines, Pulp and Paper Mill Machinery and Converting Equipment.

BEATERS
1—Dilts 750 lb. Iron Tub. Roll 44" face x 58" diameter.
1—Downingtown 1000 lb. Iron Tub. Roll 48" face x 62" diameter.

BELTING—NEW
37 feet 8" 12 ply Goodyear Rubber Belting.
150 feet 8" 4 ply Silver Duck Transmission belt.

CALENDER ROLLS
46 Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS
1—5 roll—60".
1—3 roll—42". All rolls bored for steam.
1—Lobdell 6 roll 124" Calender Stack, with doctors and drives.
1—Farrel Birmingham 110" Calender Stack with doctors. 2 rolls bored for steam.

COMBINING MACHINE
1—Black Clawson 84" Combining Machine with 1—48" diameter and 1—24" diameter Dryers. Motor, pumps, tanks, etc. Complete.

CONVEYOR
1—190, ft. long x 59" wide—with motor.

CYLINDER MOLDS
1—134" face x 36" diameter, with stainless steel shafts.

DRYERS
3—124" face x 48" diameter.
1—72" face x 42" diameter—with gear.
1—120" face x 10' diameter—Baby Dryer.
1—60" face x 96" diameter.
1—102" face x 48" diameter, with bearings.
1—108" face x 48" diameter—with gears and bearings.
1—110" face x 42" diameter with bearings and gears.
1—112" face x 48" diameter.
1—108" face x 42" diameter Creping Dryer.
1—132" face x 36" diameter, with trunnions, gears and bearings.
18—60" face x 60" diameter, with gears, bearings and steam joints.

EXTRACTOR ROLLS
1—Downingtown Extractor Roll 128" face x 24" diameter. Anti friction bearings.

FILTER PRESS
1—New Sperry filter press, size 12, type 41.

FILTERS
1—Oliver Vacuum Filters. Cylinder 10' face x 11' diameter, steel vat. 1200 GPM capacity.
1—Oliver Vacuum Filter. Cylinder 5' face x 5' 0" diameter. Iron end vat.

FLAT SCREENS
2—8 plate Sandy Hill Roller Stock with scrapers.
6—Harwood 12 plate.
1—Sandy Hill 12 plate roller stock.
2—Bagley & Sewall 8 plate, with scrapers and plates.

HYDRAULIC PRESS
1—Thorpe 200 ton. Steam platens. 40"x48" with pump.

JORDANS
1—250 Miami, for motor drive.
1—Jones Majestic with base and couplings—
1—75 Accepton with base and couplings.
1—Jones Majestic, Stainless Steel Fillings.
1—E. D. Jones Standard, Anti friction bearing 3/16" fillings—standard plugs.
1—E. D. Jones Peer, Anti friction bearing 3/16" standard steel fillings—standard plugs.
1—E. D. Jones Peer, 3/16" standard steel fillings—standard plugs.
1—Smith & Winchester Standard with granite fillings.

MOTORS
1—Allis Chalmers 30 h.p. 440 v. 900 r.p.m.
1—Allis Chalmers 50 h.p. 440 v. 580 r.p.m.
20 others 440 v. motors from 2 h.p. to 15 h.p.

PULP EQUIPMENT
1—Mitts & Merrill #17 Pulpwood chipper.
1—Bird ball bearing Pulp Screen. Practically new. Used 2 months.
4—APPLETON Ball Bearing Pulp Screens—22 ton capacity.

PULPERS
1—82 Lamson.

PUMPS
46—Centrifugal Pumps, open & closed impellers. Direct connected or Belt Driven. Extensive lines for making. Assorted capacities and heads. Most used less than one year. Also new Goulds Pumps.

REDUCERS
1—Link Belt 40 h.p. Ratio 2.2-1, 880 r.p.m.-397 r.p.m.

ROLLS—PRESS COUCH, etc.
28—Press rolls, brass and rubber covered.
14—Couch rolls, brass and rubber covered.
200—Brass and steel carrying rolls.

ROTARY SCREENS
1—32A Bird, fully rebuilt with new unit, plates, etc. Motor drive.
1—72 Bird—stainless steel vat.

SAVEALLS
1—Oliver, Vacuum type, cylinder 120" face x 60" diameter, with steel vat.

SCREW PRESSES
1—Valley Voith Screw Press Size 2.

SHEETERS
1—48" Kidder Spot Sheeter.
1—64" Dexter Sidney with 15 roll Back Stand.
1—Moore & White 91" with Orb Layboy and 10 roll backstand.

SHREDDERS
1—Ameross 32" Hammermill, anti-friction bearings.
1—Jeffrey 28½" Knives—7 knife rotor—6 knife bed plate. Ball bearing.

SLITTERS AND WINDERS
1—Beloit 120" Paper Machine Slitter and Rewinder—42" reeled.
1—Hudson Sharp 65" Wax roll slitter and rewinder.
1—Langston 40" shear cut with motor and 20 sets of slitters.
2—Cameron 42" Model C—24" reeled.
1—Sidney 42".

STEAM TURBINES
1—De Laval 250 h.p. Initial pressure 100 p.s.i. Exhaust pressure 10 p.s.i. Complete with gear reducer.
1—De Laval Variable speed—175 h.p. at 133 r.p.m. and 30 p.s.i. exhaust. Complete with gear reducer.

STOCK PUMPS
1—Sherlin 10 x 20 Single Plunger Pump.

STOCK REGULATORS
2—Merritt Stock Regulators.

SUCTION COUCH ROLLS
1—30" diameter x 204" drilled face suction couch rolls with one spare shell.

SUCTION PRESS ROLLS
1—Sandusky 52" drilled face x 14" diameter.

THICKENER
1—Woods Thickener with anti friction bearing. Cylinder 48" diameter x 120" face.

TOILET TISSUE PERFORATOR
1—Paper Converting Machine Co. Model 141 automatic 81" Perforator, slitter and Winder —with three motors—ball bearing.

VACUUM PUMPS
1—Nash H-5 Vacuum Pumps
1—Nash 24.
1—Nash 23.
1—Nash 22.

WATER FINISH UNIT
1—Valley Shrouded Unit for water finish on paper—120" flowbox.

WAXING MACHINES
1—60" Peterle complete from 1st off to single roll rewind.
1—50" Special—complete from 2 roll 1st off to single roll re-wind.

WHY LIST YOUR EQUIPMENT? — WE WILL BUY IT.

FOR SALE

Cameron Slitters

1—84" Type 10.
1—62" Type 40-1AF.
1—62" and 1—52" Type 8-S.
1—62" Type 6.
1—42" Type 6.
1—32" Type 40-2A.
1—42" Type 40-1-AF.

OTHER SLITTERS

1—84" Langston Type B.—Rewinds 80" diameter rolls.
1—60" Kidder Model S-H-1 Shear Cut. Rewinds to 40".
1—42" Meisel Shear Cut.
1—40" & 1—40" Hammersley Score Cut.
1—30" & 1—40" Langston Type A Shear Cut S & R.
1—42" Langston Center Wind Duplex Shear Cut Slitter and Rewinder.
1—32" Hobbs Shear Cut, double rewind slitter and rewinder.

POWER PAPER CUTTERS

11—Seybold, 44" & 54" 20th Century, 40" & 50" 62, 50" 102, 40" 62, 34", 44", 40" & 54" Holyoke, & 50" Dayton.
3—Oswegos, 38", 44" and 57"; 1—Sheridan, 50"; 1—Dexter, 50"; 2—Acme, 32" and 46"; 1—S&W Under Cut 63".

MISCELLANEOUS MACHINES

3—Schultz Automatic Roll Machines. Take paper 12" to 24" wide. Roll lengths 12' to 150'.
1—84" Creping Machine. Has three 5' diameter dryers, complete unit.
1—64" Creping machine, complete with automatic Kohler system.
Several Die Presses, Seybold and Sheridan, various sizes.
1—Hudson-Sharp #4 special Tissue Paper Folder.
1—New 24"-2 color, Roll to Roll Aniline Press.
1—48" Mayer Equaliser Waxing Machine, Type 46-EV. Two Coating Heads and three 16" diameter Cooling Drums.
1—84" Miami lo-type Waxing Machine, manufactured by Dilts Machine Works with 1 refrigerating unit size 4" x 4".
2—Potdevin Waxing Machines, 82" wide.
1—Paper Converting Machine Co.'s Model No. 215, three web, ¼ fold napkin machine with embossing attachment.
1—81" Hudson-Sharpe 30-B Facial Toilet Convertor.
1—Lawtomatic Model "A" Toilet Roll Wrapper.
2—Brand new 81" Dietz, very latest type, friction rewind combination toilet and towel roll convertors. Automatic counters and stop motions.
1—84" Dillon Duplex Rotary Sheet Cutter.
1—94" Moore & White Duplex Rotary Sheet Cutter.
1—42" Hobbs Embosser, with Vickers 20 ton hydraulic pressure attachment.
2—72 Lamnope Pulpers.
1—48" Holyoke Roll to Roll Embosser, Heavy Type. Two extra new rolls, one steel and one paper.
1—48" Robinson Rotary Card Cuter.
1—160" Moore & White Duplex Rotary Sheet Cutter.
1—116" Model 29 Hamblet Duplex Rotary Sheet Cutter, slitting attachment, Erie automatic layboy and twelve roll backstands.
1—74" Hamblet Duplex Rotary Sheet Cutter, slitting attachment, 8 roll backstands. Moore & White layboy, 15 HP Reliance Drive.
1—45" nine roll Holyoke Super Calender stack with AC motor equipment.
1—48" Holyoke, 6 Roll, Stack of Super Calenders.
1—Staude, "Champion" folding and gluing machine
1—40" Parry Liner, 11 roll type. New 1948. Never used.
3—Asphalt Laminating Machines, one 70" and one 88".
1—74" Waldron 3 stage combined roll and brush coating machine with J. O. Ross heating system.
1—Roto Bag Machine with electric eye.
1—35" wide 2 color Hudson-Sharp roll to roll Analine Printing Press.
2—36" x 76" Wet Machines.
1—20" Champlain 4 color Rotogravure Press.
2—2000 lb. Niagara Iron Tub Beaters.
2—Jones Majestic Jordans. Anti-Friction Bearings. Direct Connected to A.C. Motors.
4—#Claflin Refiners. Direct Connected to A.C. Motors.

GIBBS-BROWER CO., INC.

Please address reply to Room 902
21 East 40th Street, New York 16, N.Y.
Telephone Lexington 2-5759 A-31

FOR SALE

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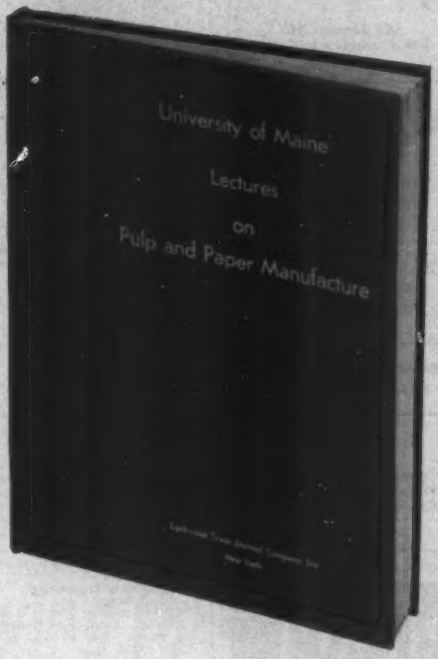

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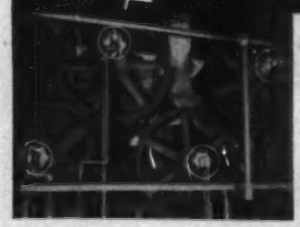

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General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FELT GUIDES
Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

FILTERS
Bird Machine Company
Holyoke Machine Co.
J. M. Huber Corp.
Humperford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

FITTINGS
The Bagley & Sewall Company
Crane Company
Shartle Bros. Mch. Co.
Walworth Company

FLEXIBLE COUPLINGS
Fawn, Frank W., & Co.
Jeffrey Mfg. Co.
Lovejoy Flexible Coupling Co.
John Waldron Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Clark Equipment Company, Industrial Truck Division
Elwell Parker Elec. Co.
Towmotor Corp.

FORMATION TESTERS
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

FOURDRINIERS
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.
Williams Apparatus Co.

FURNACES
Hoft Company, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
The Bagley & Sewall Company
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Stroh Process Steel Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRAVITY FILTERS
Holyoke Machine Co.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell United Co.
Norton Company
Samuel C. Moore and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company
Simonds Abrasive Co.

GUIDES
The Bagley & Sewall Company
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
Rice Barton Corporation
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works

GUMS
National Starch Products, Inc.
Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Fibre Making Processes, Inc.
Nichols Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Hayden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company, Industrial Truck Division
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

INSTRUMENTS, TESTING AND MEASURING
Brown Instrument Co.
Bunge Pulp & Paper Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co.

JOINTS
The Bagley & Sewall Company
Beloit Iron Works
Johnson Corp.
Lovejoy Flexible Coupling Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.
Appleton Machine Co.
Baur Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Hoppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simmons Saw & Steel Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOTTERS
Fibre Making Processes, Inc.

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company, Industrial Truck Division

LINTER COTTON
Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

LINTER PULP
Alpha Cellulose Corp.

LUBRICANTS
Gulf Refining Co.
Sinclair Refining Co.

LINDSAY FOURDRINIER WIRES ARE BABIED *throughout their manufacture!*

Reverse bending to test strength is one of many ordeals through which new-born Lindsay wire cloth must pass in order to qualify for a long, useful life in the plant of a manufacturer of paper.

The Lindsay Wire Weaving Company
14001-14299 Aspinwall Ave., Cleveland 10, O.

Lindsay **WIRES**

United Blacks

DIXIE • KOMOS PARIS BLACKS

Carbon blacks for all paper and board stocks—outstanding soft texture, particle fineness and jet black color. Takes well to the fiber, shows high retention.

Best for performance in the Beater and Jordan because of ease of wetting and ready dispersion in the furnish.

UNITED CARBON COMPANY, INC.
CHARLESTON, WEST VIRGINIA
NEW YORK • AKRON • CHICAGO • BOSTON
AND OTHER PRINCIPAL CITIES
CANADA: CANADIAN INDUSTRIES LIMITED

Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Clark Equipment Company
Industrial Truck Division
Cleveland Crane & Engrg. Co
Dilts Machine Works
Jeffrey Mfg. Co.
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

METAL TIRES
Stroh Process Steel Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Labelle Co.
Stephens-Adamson Mfg. Co.
Testing Machines, Inc.

MICRO-CRYSTALLINE WAXES
Barsco Oil Co.
Bunge Pulp & Paper Co.
Moore & Munger
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Stickle Steam Specialties Co.
Williams Apparatus Co., Inc.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Spray Engrg. Co.

PACKING BOXES
Clark Equipment Company
Industrial Truck Division
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PALLET TRUCKS
Clark Equipment Company
Industrial Truck Division

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Manchester Machine Co.
Rice Barton Corporation

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Lakeswood
Moore & White Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
Sun Oil Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

PASTING MACHINES
Beloit Iron Works
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Pusdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

pH METERS
Cambridge Instrument Co.
Tiwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company
Industrial Chemicals Division
Alririn Division, Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lakeswood Division
Lakens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Egan, Frank W., & Co.
Manchester Machine Co.
Rice Barton Corporation

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co
General Dyestuff Corp.

PRESS ROLLS
Beloit Iron Works
Rice Barton Corporation

PRESSURE FILTERS
Holyoke Machine Co.

PRESSURE VESSELS
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mch. Co.
The Moore & White Co.
Pusdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Lovejoy Flexible Coupling Co.
Rice Barton Corporation

PULP CLASSIFIER
The Bauer Bros. Co.
Thwing-Albert Instrument Co.

PULP CLEANERS
Nichols Engrg. & Research Corp.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Brothers Machine Co.

PULPERS
Apmew, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Morden Machine Co.
Shartle Brothers Machine Co

PULPS
Alpha Cellulose Corp.
Brown Company
Bunge Pulp & Paper Co.
Cottenham & Co., Inc.
Lydden & Co. (America), Inc
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co
Rentzsucher Co., Ltd.

PULPSTONES
Norton Company

PULP TESTERS
Paper and Pulp Testing Laboratories
Williams Apparatus Co., Inc.

PULVERIZING MILLS
Combustion Engineering-Superheater, Inc.
Jeffrey Mfg. Co.
F. L. Smidth & Co.

PUMPS
Allis-Chalmers Mfg. Co.
Apmew, Inc.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECOVERY SYSTEMS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O
Valley Iron Works Co.

REELS
The Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Downingtown Mfg. Co.
Hudson-Sharp Mch. Co.
Moore & White Co.
Rice Barton Corporation
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout Waldron & Co., Inc.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
APMEW, Inc.
Allis-Chalmers Mfg. Co.
Bird Machine Company
General Electric Co.
Johnson Corp.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies

RESINS
American Cyanamid Company, Plastics & Resins Division
The Dow Chemical Company
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division,
Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co., Resinous Products Div.

ROLLS
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc
Holyoke Machine Co.
Lobdell United Co.
Edward J. McBride Co., Inc.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John
Wheeler Roll Co.

ROLL COVERS
The Goodyear Tire & Rubber Company

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler Systems)

ROLL STANDS
Cameron Machine Co.
Dilts Machine Works (Kohler Systems)
Frank W. Egan & Co.
Moore & White Co.
Pusdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc

ROPE CARRIERS
Black Clawson Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

ROTARY KILNS
F. L. Smidth & Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
B. F. Goodrich Chemical Co

SATURATING MACHINES
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc
Moore & White Co.
Pusdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Chicago Bridge & Iron Co.

SAWS
Simonds Saw & Steel Co.

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co
Wagner Metal Corp.
Mowry Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
The Bagley & Sewall Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc
Downingtown Mfg. Co.
Fibre Making Processes, Inc.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.
Williams Apparatus Co., Inc.

SHEETERS
Jagenberg-Werke Akt. Ges.

SHOWER PIPES
Bird Machine Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.
Jeffrey Mfg. Co.

SILOS, STORAGE
The Marietta Concrete Corp.

SIZE PRESSES
Manchester Machine Co.
Rice Barton Corporation

SIZING
American Cyanamid Company
Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Gliddon Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Stein-Hall Co., Inc.
Wyandotte Chemicals Corp.
Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp.
Michigan Alkali Div.

SLITTERS
The Bagley & Sewall Company
Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Clark-Aiken Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Graphic Arts International Corp.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson-Sharp Mch. Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusdevin Machine Co.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SOLUBLE OILS
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPLICING TISSUE
Bunge Pulp & Paper Co.
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
A. M. Meincke & Son, Inc.
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Johnson Corp.
Stickle Steam Specialties Co.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION ROLLS
Beloit Iron Works

SULPHITE SPECIALTIES
Canadian Newsprint Supply Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company
Calco Chemical Div.
Ansul Chemical Co.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company
Industrial Chemicals Division
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company
Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
The Marietta Concrete Corp.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Thwing-Albert Instrument Co.
Testing Machines, Inc.

TENSILE TESTERS
Bunge Pulp & Paper Co.
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Testing Machines, Inc.
Nopco Chemical Co.

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Downingtown Mfg. Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

TOOLS
Walworth Company

TRACTORS AND TRUCKS
Clark Equip. Co. of Industrial Truck Div.
Elwell Parker Elec. Co.
Towmotor Corp.

TRANSMISSIONS
Alexander Bros. Belting Co.
Dodge Mfg. Corp.
Jeffrey Mfg. Co.
Link Belt Company
Lovejoy Flexible Coupling Co.
Stephens-Adamson Mfg. Co.

TRAPS
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBE MILLS
F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company

UNWINDERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

V-BELTS
Lovejoy Flexible Coupling Co.

VALVES
The Bagley & Sewall Company
Crane Company
Dilts Machine Works
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Walworth Company

VATS
Beloit Iron Works
Rice Barton Corporation

WASHERS
The Bagley & Sewall Company
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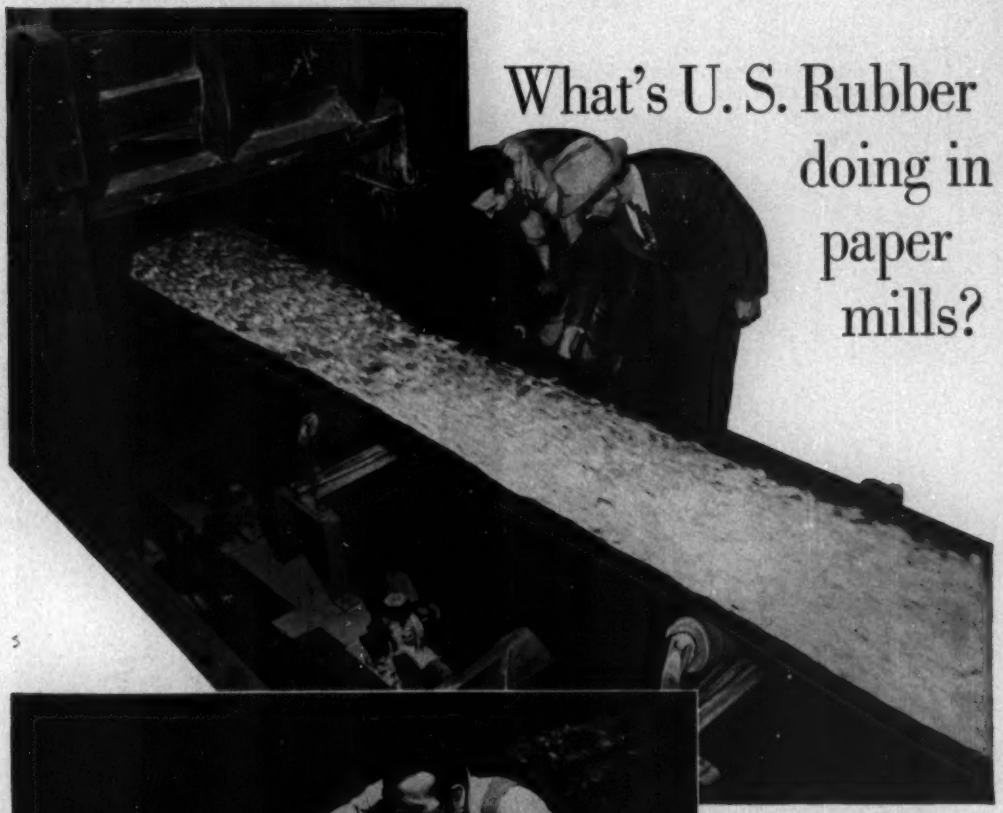

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